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18 UNITED STATES DISTRICT COURT
19 CENTRAL DISTRICT OF CALIFORNIA

20 KEITH ANDREWS, an individual,
21 TIFFANI ANDREWS, an individual,
22 BACIU FAMILY LLC, a California
23 limited liability company, ROBERT
24 BOYDSTON, an individual, CAPTAIN
25 JACK'S SANTA BARBARA TOURS,
26 LLC, a California limited liability
company, MORGAN CASTAGNOLA, an
individual, THE EAGLE FLEET, LLC, a
California limited liability company,
ZACHARY FRAZIER, an individual,
MIKE GANDALL, an individual,
ALEXANDRA B. GEREMIA, as Trustee
for the Alexandra Geremia Family Trust
dated 8/5/1998, JIM GUELKER, an
individual, JACQUES HABRA, an
individual, ISURF, LLC, a California
limited liability company, MARK

Case No. 2:15-cv-04113-PSG-JEM
[Consolidated with Case Nos. 2:15-CV-04573 PSG (JEMx), 2:15-CV-4759 PSG (JEMx), 2:15-CV-4989 PSG (JEMx), 2:15-CV-05118 PSG (JEMx), 2:15-CV-07051- PSG (JEMx)]

DECLARATION OF PETER
RUPERT, PH.D. IN SUPPORT OF
PLAINTIFFS' RENEWED
MOTION FOR CLASS
CERTIFICATION

Date: October 23, 2017
Time: 1:30 p.m.
Judge: Hon. Philip S. Gutierrez
Courtroom: 6A

1 KIRKHART, an individual, MARY
2 KIRKHART, an individual, RICHARD
3 LILYGREN, an individual, HWA HONG
4 MUH, an individual, OCEAN ANGEL IV,
5 LLC, a California limited liability
6 company, PACIFIC RIM FISHERIES,
7 INC., a California corporation, SARAH
8 RATHBONE, an individual,
9 COMMUNITY SEAFOOD LLC, a
10 California limited liability company,
11 SANTA BARBARA UNI, INC., a
12 California corporation, SOUTHERN CAL
13 SEAFOOD, INC., a California
14 corporation, TRACTIDE MARINE
15 CORP., a California corporation, WEI
INTERNATIONAL TRADING INC., a
California corporation and STEPHEN
WILSON, an individual, individually and
on behalf of others similarly situated,

16 Plaintiffs,

17 v.

18 PLAINS ALL AMERICAN PIPELINE,
19 L.P., a Delaware limited partnership,
20 PLAINS PIPELINE, L.P., a Texas limited
21 partnership, and JOHN DOES 1 through
22 10,

23 Defendants.

24 I. INTRODUCTION

25 1. I am a Professor of Economics at the University of California, Santa
26 Barbara and former Chair of the Economics Department. I am the Executive
27 Director of the UCSB Economic Forecast Project (EFP) and the Associate Director
of the Laboratory for Aggregate Economics and Finance (LAEF). I received my
B.S. from Santa Clara University and my M.A. and Ph.D. from the University of
Rochester. My specialties include macroeconomics and labor economics. I have
been at UCSB for ten years after teaching at several universities and eleven years at
the Federal Reserve Bank of Cleveland as a Senior Economic Adviser. I am also an
Associate Editor of the European Economic Review and Labour Economics. My
curriculum vitae is attached as Appendix 1.

1 2. The EFP has collected data for the local Santa Barbara community for
2 the past 36 years and provides analysis in an annual publication. In addition, the
3 EFP has conducted many economic impact studies for regional projects, events, and
4 developments. Economic impact studies are studies that quantify, in terms of
5 output and employment, the economic benefits to the area of a business, event or
6 any other entity that produces output and jobs. EFP's economic impact studies
7 include: the Santa Barbara Airport, the Dallas Cowboys Training Camp in Oxnard,
8 an apartment development, as well as several oil studies commissioned by
9 chambers of commerce. As an example, in 2011, the Santa Maria Valley Chamber
10 of Commerce commissioned a project to analyze the economic impact of the oil and
11 gas industry in Santa Barbara County. The study utilized economic modeling
12 (IMPLAN Pro) and statistical analysis through the reliance of publicly available
13 data as well as direct survey information and accounting documents provided to the
14 UCSB Economic Forecast Project (EFP) by local oil and gas companies. The study
15 was commissioned to show the extent of job creation, tax revenues, and the
16 expansion of businesses due to the presence of the industry in the county.

17 3. I have been asked to analyze the economic impact of the Plains All
18 American Pipeline rupture and shutdown, to consider whether such an analysis can
19 be accomplished on a classwide basis, and whether the proposed class definition
20 captures those most likely to be impacted by the rupture and shutdown. The
21 proposed class definition is:

22 “Individuals and entities who were employed, or contracted, to work on or to
23 provide supplies, personnel, or services for the operations of the off-shore oil
24 drilling platforms, Hidalgo, Harvest, Hermosa, Heritage, Harmony, Hondo,
25 and/or Holly, off the Santa Barbara County coast, or the on-shore processing
26 facilities at Las Flores/POPCO, Gaviota, and/or Venoco/Ellwood as of May
27 19, 2015.”

28 4. The opinions below are based on findings reached to a reasonable

1 degree of economic and scientific certainty. I reserve the right to amend this report
2 to account for additional information.

3 5. I charge \$400 per hour.

4 6. I have not served as an expert witness in the past four years.

5 II. EXECUTIVE SUMMARY

6 7. The economic impact of the oil spill on the regional oil and gas
7 industry can be measured on a classwide basis using standard, reliable economic
8 methods and data derived from common sources, including publicly-available
9 employment and economic output data.

10 8. Applying standard regression methods and “difference in difference”
11 analysis to publicly available data from the Bureau of Labor Statistics (BLS) and
12 supplemented by employment and spending data provided by the platform and on-
13 shore facility operators, I can determine to a reasonable degree of certainty the
14 extent to which the oil spill has reduced employment to date, controlling for factors
15 affecting the industry as a whole, such as world oil prices.

16 9. Using publically available data on average weekly wages,
17 supplemented with data from employers, I can calculate the aggregate loss in wages
18 suffered by the on-shore and off-shore workers that can be attributed to the spill.

19 10. Applying standard regression and “difference in difference” analysis to
20 publicly available economic output data, and supplemented by the
21 contractual/expenditure data provided by the platform and on-shore facility
22 operators, I can determine to a reasonable degree of certainty the extent to which
23 the oil spill has reduced earnings among those business entities that are
24 contractually connected to the oil platforms and on-shore facilities.

25 11. The class definition is limited to those individuals and entities whose
26 losses can be attributed to the shutdown and measured through publicly available
27 data and common sources. This includes the individuals working at seven off-shore
28 oil platforms and the related on-shore facilities in oil and gas extraction that utilized

1 Lines 901 and 903, and those contractually involved in service and supply to those
2 platforms and facilities.

3 12. The class definition does not include entities and individuals for whom
4 the Pipeline rupture and shutdown may have had a more remote (induced) impact,
5 such as restaurants where laid-off oil workers no longer patronized. An induced
6 impact, in short, means that businesses arise or are made larger due to the presence
7 of another business or industry. For example, suppose a business moves into town
8 and employs two hundred individuals. The salaries that they earn go to renting,
9 buying cars, food, child care, and so on. So, more housing may need to be built, or
10 an additional person would need to work for the rental company. A car dealer may
11 have to add additional staff. Same with the local grocer. Now, those additional
12 people are also earning a salary and they need to rent, buy cars, eat, and so on.
13 Here, the class definition is designed to exclude the “ripples” through the local
14 economy reflecting the induced economic impact of the rupture and shutdown.

15 III. ANALYSIS

16 A. The Santa Barbara Oil Industry and The Pipeline Shutd own

17 13. The following is my understanding of the Santa Barbara on-shore and
18 off-shore oil industry and labor market and the Pipeline shutdown, based on my
19 past studies, interviews with individuals involved in the oil industry, review of
20 documents prepared in this case, newspaper articles, government reports, as well as
21 internet research.

22 14. Plains transports crude oil produced off the coast of Santa Barbara to
23 inland refineries. Plains’ pipeline in and around Santa Barbara County is composed
24 of two major pipeline sections: (1) Line 901, and (2) Line 903. Line 901 is 10.7-
25 mile pipeline that carries processed crude from ExxonMobil’s Las Flores Canyon
26 facility and Venoco, Inc.’s Ellwood On-shore Facility toward the Gaviota pump
27 station. Line 903 receives all of the crude oil delivered by Line 901 and picks up
28 oil from the Freeport-McMoRan Inc. oil platforms at Point Arguello and related on-

1 shore facility and heads north, past the Sisquoc pump station and into San Luis
2 Obispo and Kern counties, spanning approximately 129 miles. A map showing the
3 Pipeline route and the off-shore and on-shore facilities is attached as Appendix 2.

4 15. Exxon's crude oil is produced at ExxonMobil's three off-shore
5 platforms (Hondo, Harmony and Heritage), carried through pipelines to
6 ExxonMobil's on-shore processing facilities (Las Flores and POPCO), and stored
7 in tanks at Las Flores Canyon.

8 16. Venoco's Holly Platform located in the South Ellwood Off-shore Oil
9 Field also depends on Lines 901 and 903. Venoco's crude oil from Platform Holly
10 is delivered into Line 901 at the Las Flores facility and then Line 903 transports the
11 output from Platform Holly to Kern County, where oil is shipped for sale.

12 17. Line 903 is also used to move the production from Freeport-
13 McMoRan's Hidalgo, Harvest and Hermosa platforms in Point Arguello to the
14 ConocoPhillips refinery in Santa Maria.

15 18. Following a rupture in Line 901 on May 19, 2015 due to corrosion,
16 Line 901 and most of Line 903 (which also suffered corrosion) were shut down.
17 The rupture and Pipeline closure halted operations at Venoco's Platform Holly and
18 its on-shore processing facility, ExxonMobil's three off-shore platforms and on-
19 shore Las Flores Canyon facilities, as well as Freeport-McMoRan's three off-shore
20 platforms and on-shore facility. Citing the rupture of Plains' Pipeline, Venoco has
21 announced that it is declaring bankruptcy and abandoning all operations off the
22 Santa Barbara coast. At this time there is no certainty as to the timing of the
23 repairs.

24 19. The oil industry has had a significant impact on Santa Barbara
25 County's economy through its purchases of intermediate inputs, investment in new
26 structures and equipment, and employment within and around the county.

27 20. Off-shore oil production in Santa Barbara County increased 47%
28 between 2008 and 2014. The oil industry has a long, historical presence in the

1 county characterized by key episodes of technological innovation in which the
2 industry has risen to meet worldwide demand for its product. This innovation and
3 increased production are often coupled with increased economic vitality for the
4 local economy and its households.

5 21. In 2011, .8 million barrels of oil were produced off-shore. In 2014, 1.4
6 million barrels of oil were produced off-shore. In 2016, post-spill, no barrels of oil
7 were produced off-shore. The industry has provided an important source of high
8 wage jobs in an economy that was projected to predominately add low paying
9 professions in the near future. The average oil and gas extraction employee in Santa
10 Barbara County earned an annual salary of roughly \$177,200 in 2013, no
11 observation in 2014, \$141,883 in 2015 and \$146,820 in 2016.

12 22. While there has not yet been a study for only the off-shore facilities, an
13 earlier study done by the UCSB Economic Forecast Project for the on-shore
14 facilities showed the industry's economic activity supported an estimated \$49.2
15 million in local, state, and federal tax revenue annually. These impacts are largely
16 in the form of income, corporate, property, and sales tax revenue, with Venoco
17 being one of the largest, if not the largest property tax payer in the county.

18 23. Further, oil and gas industry has a substantial community impact. For
19 example, I estimate that the on-shore oil and gas industry alone has annual
20 contributions of \$1.13 million across 240 non-profit and philanthropic
21 organizations within Santa Barbara County.

22 B. Measuring the Impact of the Pipeline Shutdown

23 24. To determine the impact on employment of the shutdown, information
24 can be obtained from the Bureau of Labor Statistics' Current Employment
25 Statistics. Using data already available, it can be shown that the pipeline shutdown
26 itself reduced employment in the county.

27 25. To measure the shutdown's impact on economic output, data can be
28 obtained from the United States Bureau of Economic Analysis, part of the

1 Department of Commerce. Data are currently available only through 2015, so any
2 analysis would be incomplete and premature. I anticipate that the data for 2016 will
3 be available this fall.

4 26. Additionally, useful data would come from the oil companies (the
5 operators of the platforms and related on-shore facilities) themselves, as well as the
6 support companies that contract and subcontract with them. For example, the
7 records from Venoco would describe how many individuals worked on Platform
8 Holly at any one time as well as those working at the Ellwood on-shore facility. In
9 addition, the oil companies' records likely will identify their affected contractors in
10 supporting industries (such as boat operators, food suppliers, personnel providers,
11 etc.) whose records, in turn, would identify the affected subcontractors. Based on
12 my past experience studying this industry, I also expect the oil company records to
13 include expenditure data, such as the total amount spent by the company on
14 outsourced services, such as painting, maintenance, construction and other services
15 provided at the platforms and on-shore facilities.

16 27. Records and interviews from individual employees and contractors are
17 not necessary to determine the overall wage and business losses due to the spill, but
18 would inform a mitigation analysis, as well as allocation of the loss among the
19 individual class members. For example, these sources would provide information
20 on whether and when a particular business or individual secured a replacement
21 source of earnings, and at what cost.

22 28. Based on my understanding of the available data, as well as my
23 understanding and research in this industry and labor market, and my experience
24 using standard, accepted economic methods, it is my opinion that this class includes
25 only those workers and entities most likely to have suffered measurable impacts
26 due to the Pipeline shutdown; it does not include those who suffered only more
27 attenuated (induced) losses that cannot be measured to a reasonable degree of
28 certainty with the methods described below.

1 1. Methodology for Determining Impacts on Oil Industry
2 Workers

3 29. Employment data can be drawn from the California Employment
4 Development Department (EDD), which uses the Current Employment Statistics
5 from the United States Bureau of Labor Statistics. Each month the Current
6 Employment Statistics program surveys about 147,000 businesses and government
7 agencies, representing approximately 634,000 individual worksites, in order to
8 provide detailed industry data on employment, hours, and earnings of workers on
9 nonfarm payrolls for all 50 States, the District of Columbia, Puerto Rico, the Virgin
10 Islands, and about 450 metropolitan areas and divisions. These data are the most
11 widely used in the analysis of labor markets for the United States and local areas.
12 My analysis to date has included all available years, from 1990-2017.

13 30. The Bureau of Labor Statistics uses industry codes created by the
14 United States Census. In particular, the North American Industry Classification
15 System (NAICS) is the standard used by Federal statistical agencies in classifying
16 business establishments for the purpose of collecting, analyzing, and publishing
17 statistical data related to the U.S. business economy. NAICS is an industry
18 classification system that groups establishments into industries based on the
19 similarity of their production processes. It is a comprehensive system covering all
20 economic activities. There are 20 sectors and 1,057 industries in 2017 NAICS
21 United States.

22 31. To analyze the employment losses due to the oil spill, I pulled data
23 from NAICS codes 21 and 211. Monthly data are available for the NAICS code 21,
24 the more general category that encompasses mining and logging as well as oil
25 extraction activities. The general category mining references extracting products
26 from the earth, such as lumber, oil, and so on. Monthly data are important because
27 of the frequency. Industries in the Oil and Gas Extraction subsector (Code 211)
28 operate and/or develop oil and gas field properties. Such activities may include

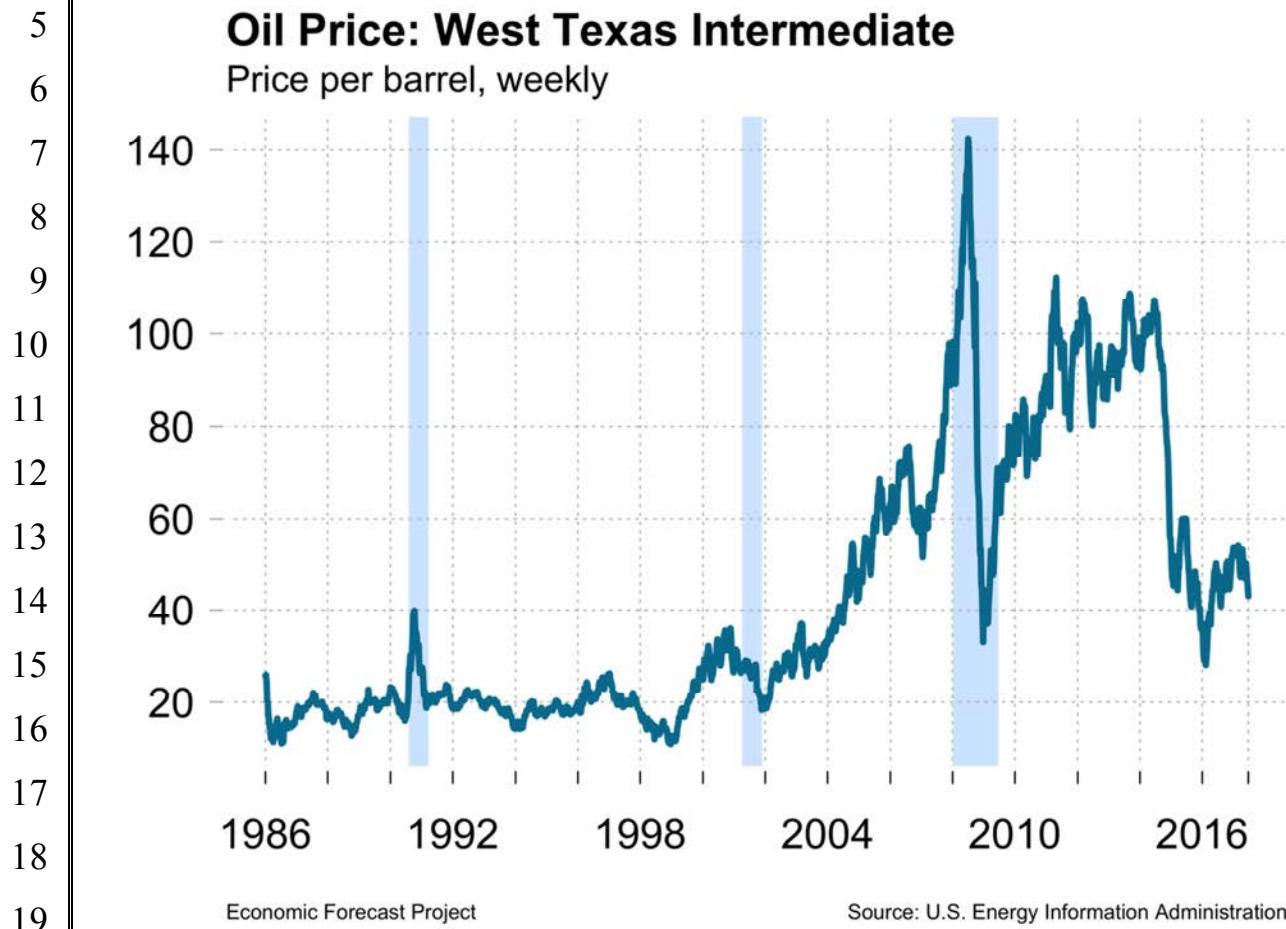
1 exploration for crude petroleum and natural gas; drilling, completing, and
2 equipping wells; operating separators, emulsion breakers, desilting equipment, and
3 field gathering lines for crude petroleum and natural gas; and all other activities in
4 the preparation of oil and gas up to the point of shipment from the producing
5 property. This subsector includes the production of crude petroleum, the mining
6 and extraction of oil from oil shale and oil sands, and the production of natural gas,
7 sulfur recovery from natural gas, and recovery of hydrocarbon liquids.

8 32. The methodology relies on regression analysis to determine the
9 employment effects caused by the Plains All American Pipeline spill on May 19,
10 2015.

11 33. Regression analysis is a way to determine the relationship between two
12 or more variables. The regression analysis below does just that. For example, sales
13 at Best Buy might depend on average income in the United States. When income is
14 higher or lower, how do sales respond? In regression terminology, sales is the
15 dependent variable and income the independent variable. Now, suppose it is
16 December and income is low, so from that it would be expected that sales would be
17 low. However, it is near Christmas, and sales are actually higher. What regression
18 analysis can do is to say how much of the change in sales is due to low income and
19 how much to the fact that it is Christmas. As it relates to this case, all oil
20 companies on-shore and off-shore experienced the same decline in oil prices. So,
21 some amount of the decline in employment comes from that. Now, the spill
22 primarily affected employment in Santa Barbara County, as on-shore firms in Kern
23 County, say, were most likely not affected or minimally affected by the pipeline
24 shutdown. So, a regression can “control” for observable factors that can contribute
25 to employment in that industry.

26 34. While many factors affect employment in an industry, of interest here
27 is the effect of the spill on employment. The key is to examine the difference in
28 employment changes in an area affected by the spill and those not. For example, oil

1 prices fell over 50% since 2014 as can be seen in Figure 1. That price decline was
2 common to all areas. The demand and supply of oil largely determines the price of
3 oil. Oil prices were included in the regression as they are a component common to
4 all counties, states, etc. Figure 1 shows the historical price of oil:



35. To determine the employment effects in a regression analysis,
employment will be the dependent (left hand side variable). The independent
variables (right hand side variables) will be oil prices and the date of and after the
spill. To get percentage changes, it is necessary to first take the natural logarithm
of employment (E) in the mining as well as the oil and gas extraction sector. This
is done to show the effect of percent changes. Next it is necessary to define a
“dummy” variable that takes the value of 1 during the time of the oil spill and 0
elsewhere (spill). Finally, calculate the year-over-year change in the per barrel
price of West Texas Intermediate (WTI), also known as Texas light sweet, a grade

1 of crude oil used as a benchmark in oil pricing. This regression then shows the
2 relationship between employment before and after the oil spill taking into account
3 the decline in oil prices.

4 2. Empirical Findings

5 36. Table 1 runs the regression mentioned in the paragraph above.
6 Column (1) in Table 1 runs the regression for Santa Barbara County without oil
7 price changes and column (2) includes the oil price changes. The “Spill Indicator”
8 row shows that there is about a 25-30% decline in employment due to the spill
9 alone. The other columns are for all counties in California without including Santa
10 Barbara (Column 3) and for the “control” counties of Los Angeles, Ventura and
11 Kern.

12 37. Table 2 explores the effects from a “difference-in-differences” type
13 analysis. Difference in differences (diff-in-diff) is a tool to estimate treatment
14 effects comparing the pre- and post-treatment differences in the outcome of a
15 treatment and a control group. In general, we are interested in estimating the effect
16 of a treatment (e.g. union status, medication, etc.) on an outcome (e.g. wages,
17 health, etc.). To see the effect of a treatment we would like to know the difference
18 between a person (or industry) in a world that received the treatment and one in
19 which they did not. Of course, only one of these is ever observable in practice.
20 Therefore we look for cases with the same pre-treatment trends in the outcome. For
21 example if oil companies on-shore and off-shore faced the same overall trends, say
22 declining oil prices, before the spill, we could then determine the effect of the spill
23 on the “treated” group, i.e., a group affected by the spill. On-shore oil production,
24 say in Kern County, would be minimally affected by the Refugio spill, while those
25 producing off-shore Santa Barbara County would be affected.

26 38. In the current context, the diff-in-diff is the difference in Santa Barbara
27 county mining employment compared to the control counties (column (1)). Here it
28 shows about a 20% decline compared to counties that did not experience the Plains

1 All American spill. This result from this data alone shows that employment would
2 have been about 160 higher in this code had the spill not occurred. As discussed
3 below, this figure does not include those who worked on or supported the Platforms
4 and Facilities but fall under a different NAICS code, or those who maintained
5 employment, but suffered a loss in wages or incurred costs due to the spill.

6 39. What exactly does Table 2 show? Take Column (1). It shows the
7 difference in employment in the Mining, Quarrying, and Oil and Gas Extraction
8 industries (NAICS code 21) in Santa Barbara County relative to the difference in
9 employment in all counties in California, after the oil spill. The -0.199 number
10 means that Santa Barbara county experienced a roughly 20% decline in
11 employment relative to all counties in California due to the spill. Column (2)
12 simply subtracts Santa Barbara County employment from the other counties and the
13 percentage decline is roughly the same.

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Table 1: Employment Effects

	<i>Dependent variable: log Employment</i>			
	SB County	CA excluding SB	Control Counties	
	(1)	(2)	(3)	(4)
Spill Indicator	-0.259*** (0.046)	-0.292*** (0.044)	-0.080*** (0.022)	-0.078** (0.033)
WTI YoY Change		-0.204*** (0.034)	-0.092*** (0.017)	-0.154*** (0.025)
Constant	7.093*** (0.012)	7.102*** (0.012)	10.171*** (0.006)	8.541*** (0.009)
Observations	328	316	316	316
R ²	0.090	0.184	0.106	0.111
Adjusted R ²	0.087	0.178	0.101	0.106
Residual Std. Error	0.216	0.202	0.102	0.151
F Statistic	32.075***	35.210***	18.646***	19.639***

Notes: Standard errors in parentheses. *p<0.1; **p<0.05; ***p<0.01. Controls: Los Angeles, Kern and Ventura.

Table 2: Employment Effects: “diff-in-diff”

	<i>Dependent variable: log Employment</i>	
	Control Counties	CA excluding SB
	(1)	(2)
Spill Indicator	-0.199*** (0.037)	-0.187*** (0.034)
Constant	-1.448*** (0.010)	-3.081*** (0.009)
Observations	328	328
R ²	0.081	0.086
Adjusted R ²	0.078	0.083
Residual Std. Error (df = 326)	0.176	0.160
F Statistic (df = 1; 326)	28.543***	30.566***

Notes: Standard errors in parentheses. *p<0.1; **p<0.05; ***p<0.01. Controls: Los Angeles, Kern and Ventura.

Table 3 shows a decline in employment in Santa Barbara County through the diff-in-diff variable of roughly 25% in Column (1) in the second row, and 125% in Column (2) second row where county specific trends are included.

Table 3: QCEW Results

	<i>Dependent variable:</i>	
	No Trends	
	(1)	(2)
spill_6mo_delay_panel	0.302* (0.163)	-0.024 (0.201)
spill_6mo_delay_panel:county_fe_1	-0.245 (0.311)	-1.252*** (0.408)
county_fe_1	0.090 (0.096)	4.695*** (0.312)
county_fe_2	0.089 (0.091)	4.131*** (0.307)
county_fe_3	-0.986*** (0.091)	4.177*** (0.307)
county_fe_4		
WTI_monthly_ts_YoY_panel	0.080 (0.097)	-0.042 (0.072)
Constant	5.560*** (0.066)	1.177*** (0.220)
Observations	736	736
R ²	0.213	0.675
Adjusted R ²	0.206	0.665
Residual Std. Error	0.889 (df = 729)	0.578 (df = 713)
F Statistic	32.837*** (df = 6; 729)	67.177*** (df = 22; 713)

Note: Time x County fixed effects included but not shown in (2); *p<0.1; **p<0.05. ***p<0.01

3. Wages

40. Historically, occupations in the oil and gas extraction (three digit NAICS code 211) have been the highest paying occupations in Santa Barbara County as can be seen here. The table below shows that for 2016 (the latest data available) average annual pay for oil and gas extraction only (NAICS code 211) is \$146,820. Using a rough loss of employment of 100, results in an annual loss in income of \$14,682,000. This figure includes only total job loss for those in NAICS

1 code 211, not the additional jobs in supporting industries, nor those who remained
2 employed but lost wages and/or were relocated at an incurred cost. Upon receipt of
3 data from the oil companies, I can determine additional losses of those not falling
4 under code 211 and those who had a reduction in hours, or were re-located.

5 **Series Id:** ENU06083505211
6 **State:** California
7 **Area:** Santa Barbara County, California
8 **Industry:** NAICS 211 Oil and gas extraction
9 **Owner:** Private
10 **Size:** All establishment sizes
11 **Type:** Average Annual Pay

12 Download: [!\[\]\(1ac7c971e7df5bf204fbb84fd617a50a_img.jpg\) .xlsx](#)

Year	Annual
2006	67013
2007	84865
2008	101436
2009	112455
2010	102906
2011	-(ND)
2012	144494
2013	177200
2014	-(ND)
2015	141883
2016	146820(P)

20 ND : Not Disclosable -- data do not meet BLS or State agency disclosure standards.

21 P : Preliminary.

22
23 4. Additional Employment Losses

24 41. In addition to the jobs described above, the industry also hires workers
25 and contracts for services, such as construction, welding, painting, crane operations,
26 maintenance, and boat operation, and purchases supplies such as tools, food and
27 paint. Many of these workers are highly skilled. Employment and
28 contractual/expenditure information from the oil companies will provide additional

1 data from which I can determine additional employment losses attributable to the
2 spill, using the regression method described above.

3 5. Methodology for Determining Losses to Contracting
4 Entities

5 42. Like the methodology described above for determining employment
6 losses, by applying standard regression and “difference in difference” analysis to
7 publicly available economic output data (once they become available, expected in
8 the fall), and supplemented by the contractual/expenditure data provided by the
9 platform and on-shore facility operators, I can determine to a reasonable degree of
10 certainty the extent to which the oil spill has reduced earnings among those entities
11 that contract with the oil companies to provide supplies, personnel, and services.

12 C. Input -output Analysis: IMPLAN

13 43. In addition to the methods described above, there are additional
14 standard, reliable methods to model the employment and economic impacts of the
15 spill, which I could use to supplement and/or verify the findings above. A current
16 state of the art method in identifying the economic impacts of an industry comes
17 from input-output tables and is known as “impact studies,” or IMPLAN. The EFP
18 has conducted impact studies using IMPLAN. A couple of examples of such a
19 study can be found in Appendix 3.

20 44. IMPLAN is a modeling software used for economic analysis. It is an
21 input-output driven model first developed by the U.S. Forest Service, the Bureau of
22 Land Management and the Federal Emergency Management Agency for use in land
23 planning and resource management. Input-output models are accounting tables
24 tracing the linkages of inter-industry purchases and sales in a specific study area,
25 and they are used to calculate the effects per dollar of spending on jobs, income,
26 and output in that specific area. These models produce estimates of local spending
27 impacts (referred to as multipliers) using these inter-industry linkages. IMPLAN
28 uses information about the types and amounts of production factors raw materials,

1 labor, and intermediate goods needed to produce any given output. IMPLAN uses
2 dollar valuations of these inputs, and traces the currency flows from the original
3 purchases of goods as they ripple through the study area economy. In input-output
4 terminology, expenditures by a firm will generate three types of impact: direct
5 impacts, indirect impacts, and induced impacts. For example, an initial expenditure
6 by Firm A (such as a payment to a local company for raw materials) is referred to
7 as a direct impact. The company receiving the payment from Firm A is expected to
8 buy some of its inputs locally. If the company receiving the payment from Firm A
9 increases its purchases because of its business with Firm A, these additional
10 purchases are referred to as indirect impacts. That is, the existence of Firm A
11 causes Firm B to purchase more inventory, build more space and hire more
12 employees. Finally, employees of the firms that are impacted both directly and
13 indirectly are expected to spend some of their income locally. The additional local
14 spending by these employees generated through this mechanism is referred to as the
15 induced impact.

16 45. The main point of these analyses is to examine the benefit or cost of
17 having or not having a firm in the area. The studies come up with an employment
18 “multiplier” that will give the direct impact through the initial expenditures by the
19 firm(s) in question and the indirect impact through the jobs created and value added
20 occurring throughout the supply chain. There is also an “induced impact” through
21 the additional spending that occurs as a result of increased labor income in the area.
22 However, it is the sum of the direct and indirect that are of interest here as the class
23 definition does not include those who suffered only an “induced” impact.

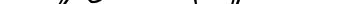
24 46. For example, our previous research in this industry found that for each
25 person directly hired, an additional 0.3 person becomes employed to support the oil
26 and gas extraction sector as a result. Thus, assuming the oil spill directly caused a
27 loss of jobs, another third of that would have been employed (or not laid off), had it
28 not been for the oil spill. These figures are conservative and would be

1 supplemented through the data and records collected from the oil companies and
2 their supporting companies, as described above.

3 47. To get a better perspective on the additional business impacts, I could
4 conduct a deeper study of the industry, such as the IMPLAN study conducted for
5 the on-shore facilities. The study could trace every dollar spent by the off-shore
6 industry throughout the supply chain in terms of sectors. The analysis could be
7 made more precise with off-shore oil company data depicting the exact
8 expenditures made, and to whom, for each firm.

9 I declare under penalty of perjury that the foregoing is true and correct.

10 Executed this 12th day of July, 2017, at Santa Barbara, CA.

11
12 

Peter Rupert, Ph.D.

APPENDIX 1

Peter Rupert

May 2, 2017

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Appointments held

1986-1991	West Virginia University
1991-1993	State University of New York at Buffalo
1993-1994	Birkbeck College, University of London
1994-1995	University of Southern California
1995-2003	Federal Reserve Bank of Cleveland
2003-2004	University of Western Ontario
2004-2007	Federal Reserve Bank of Cleveland
2007-	University of California, Santa Barbara
2012-2017	Chairman, Department of Economics

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1990 College of Business and Economics Teacher of the Year, West Virginia University.
2004 Canada Foundation Infrastructure Grant, \$100,000.
2004-2007 Social Science and Humanitites Research Council Grant, \$135,000.

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1995b "Marriage and Earnings," with Christopher Cornwell, *Federal Reserve Bank of Cleveland Economic Review*, Volume 31, Issue 4, December 1995, Pages 10-20.

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[Economic Snapshot](#), with Zach Bethune and Tom Cooley.

[European Economic Snapshot](#), with Tom Cooley.

Teaching

Econ 2: Principles of Macroeconomics

Econ 204: First year PhD Macro

Econ 253: Markets with Frictions

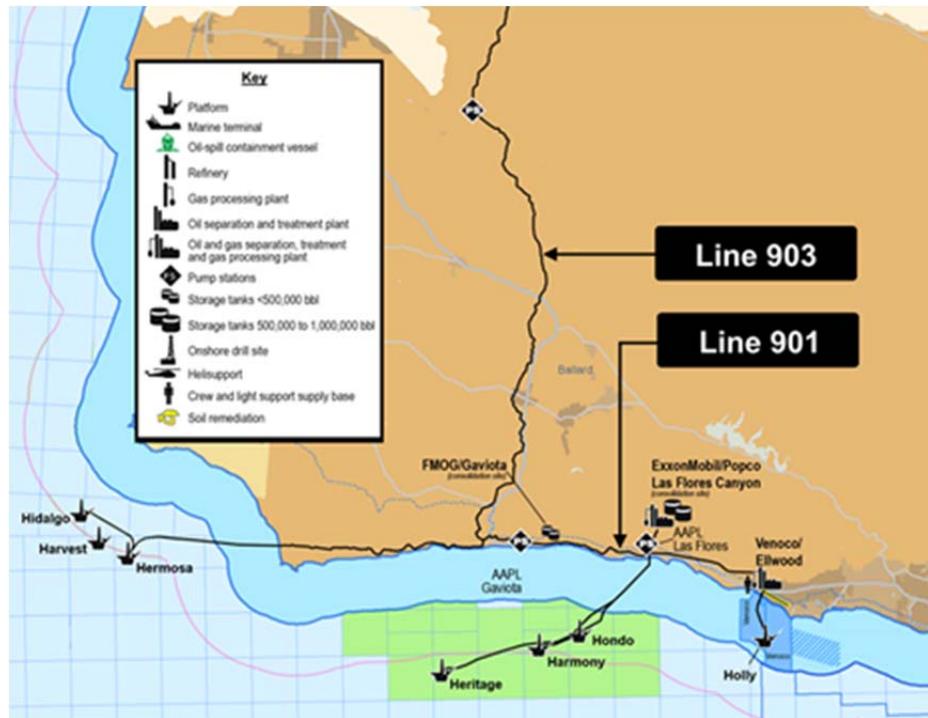
Service to the profession

Associate Editor, *European Economic Review*

Co-Editor, *Labour Economics*

Lots of refereeing

APPENDIX 2



APPENDIX 3

UCSB Economic Forecast Project

Santa Barbara Onshore Oil and Natural Gas Industry

Economic Impact Study
September 2013



Santa Maria Valley
Chamber of Commerce
Visitor & Convention Bureau

Commissioned by the
Santa Maria Valley Chamber of Commerce

UCSB ECONOMIC FORECAST PROJECT | **EFP**

Executive Summary

The goal of this project is to measure the economic and community impacts of the onshore oil and gas industry on Santa Barbara County in 2011. The Santa Maria Valley Chamber of Commerce commissioned the project. The analysis utilizes economic modeling (IMPLAN Pro) and statistical analysis through the reliance of both publicly available data as well as direct survey information and accounting documents provided to the UCSB Economic Forecast Project (EFP) by local oil and gas companies.

The report's findings show that the onshore oil and natural gas industry has a significant impact on Santa Barbara County's economy through its purchases of intermediate inputs, investment in new structures and equipment, and employment within the county.

While onshore oil production has been steadily declining in the state of California as a whole, production in Santa Barbara County has increased 75 % over the past 4 years. The industry has a long, historical presence in the county characterized by key episodes of technological innovation in which the industry has risen to meet worldwide demand for its product. This innovation and increased production are often coupled with increased economic vitality for the local economy and its households.

A total of 16 companies operate within Santa Barbara County and collectively produced 2.8 million barrels of oil and 2.4 million mcf of natural gas in 2011. While the industry is generally a small contributor to total employment in the county, it provides an important source of high-wage jobs in an economy that is projected to predominately add low paying professions in the near future. The average employee earns an annual salary between \$75,000 and \$100,000, in sharp contrast to the median household income of \$58,000 in Santa Barbara County in 2011. Further, the onshore oil and gas industry has a substantial community impact. We estimate that the industry has annual contributions of \$1.13 million across 240 non-profit and philanthropic organizations within Santa Barbara County.

In describing the economic impact, we consider three separate channels: the direct impact, the indirect impact, and the induced impact; these sum to represent the total economic impact of the onshore oil and gas industry. The ***direct impact*** represents initial expenditures, such as a payment to a local company for raw materials. The entity receiving the payment of that initial expenditure is expected to buy some of its inputs locally. Those purchases by the impacted entity attributable to the increase in business generated by the initial expenditure are referred to as an ***indirect impact***. Finally, employees of the firms that are impacted both directly and indirectly are expected to spend a large fraction of their income locally. The additional local spending by these employees generated through this mechanism is referred to as the ***induced impact***.

Table 1: Direct, Indirect, and Induced Economic Impacts for Santa Barbara County

Impact Type	Employment	Output
Direct Effect	957.5	\$149,244,962
Indirect Effect	280.3	\$46,054,141
Induced Effect	716.2	\$96,055,861
Total Effect	1,953	\$291,354,963

Note: Impacts stated in 2013 dollars

We recreate the significant findings of the report in the table and bullet points below.

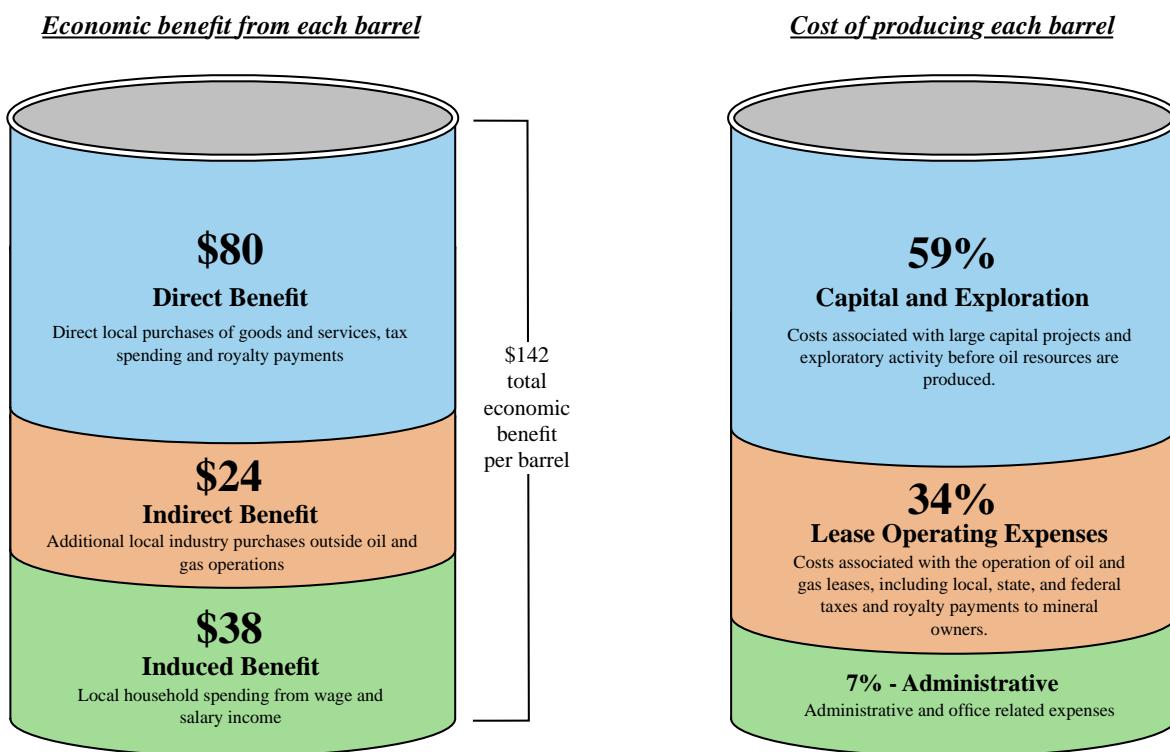
- The total economic impact of the onshore oil and gas industry on Santa Barbara County in 2011 was \$291.4 million. This is composed of \$149.2 million in direct impacts and \$46.1 million and \$96.1 million in indirect and induced impacts, respectively. The corresponding output multiplier effect is 1.95. That is, for every dollar directly contributed by the industry to output, another \$.95 was generated by the activity of its suppliers and employees. In alternative scenarios, the total economic impact can be as large as \$402.1 million; however, the output multiplier effect is consistently around 1.95.
- The total economic impact in 2011 was supported by the production of 2.9 million barrels of oil. Therefore, we estimate that for each barrel of oil produced in 2011, there was an economic impact of \$103 to \$142 within the Santa Barbara County economy, depending on the scenario used.
- The industry had a total impact on Santa Barbara County's employment of 1,953 jobs in 2011, leading to an employment multiplier of 2.04. This implies for each job directly supported by the onshore oil and gas industry through direct expenditures, another 1.04 jobs are created through the additional economic activity.
- The most affected sectors are in services relating to the development and maintenance of wells and leases, wholesale trade, and engineering and legal services. These sectors collectively accounted for \$105.6 million, or 36% of the total economic impact and 625.2 jobs or 32% of the total employment impact.
- The industry's economic activity supports an estimated \$49.2 million in local, state, and federal tax revenue annually. These impacts are largely in the form of income, corporate, property, and sales tax revenue.

Finally, in Figure 1 below we provide a comparison of the economic benefit versus the cost of producing a barrel of oil. The barrel on the left represents the economic benefit per barrel of oil while the barrel on the right represents the average cost. For each barrel of oil produced onshore in Santa Barbara County in 2011, there was \$142 of economic benefit generated in Santa Barbara County. \$80 per barrel corresponds to the direct benefit of local purchases of goods and services, tax spending, and royalty payments by oil and gas companies. \$24 per barrel is associated with the indirect benefit of additional local purchases by the supply-chain. Finally, \$38 per barrel corresponds to the induced

Figure 1: Economic Benefits and Costs of Producing a Barrel of Oil

Local Onshore Oil Economics

Santa Barbara County - 2011



Note: Figure based on 2,836,846 barrels of oil produced onshore in Santa Barbara County in 2011. Benefit includes operations with developmental activity only.

benefit of local household spending from wage and salary income.

We additionally estimated that the average cost of producing a barrel of oil onshore in Santa Barbara County was \$90 in 2011. The largest fraction, 59%, went towards exploration and capital expenses, which are incurred before production takes place. A further 34% corresponds to expenses associated with the operation of oil and gas leases, which includes royalty and tax payments. The remaining costs go toward general and administrative expenses (7%) in support of both investment and operational activities.

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Introduction

Project Description

The onshore oil and gas industry is an important industry within Santa Barbara County and has experienced explosive employment growth over the past few years. As of 2011, a total of 16 companies operated in the county and collectively produced 2.8 million barrels of oil and 2.4 billion cubic feet of gas. This project was commissioned by the Santa Maria Valley Chamber of Commerce with a goal to analyze the total economic impact of the onshore oil and gas industry in Santa Barbara County. All companies operating in the county were asked to participate in the study; seven of them chose to do so. Each company provided expense data that was used in the analysis; for those companies that chose not to participate, estimates of expenses were estimated using size and production numbers. In addition to expense information, companies also provided information on charitable contributions and employee salaries. This allowed us to comment on the ‘community impact’ as well as the economic impact. The survey data were compiled and analyzed in IMPLAN Pro software to determine the direct, indirect, and induced economic impacts of the onshore oil and gas industry.

Historical Context¹

The onshore oil and gas industry has a long history in Santa Barbara County in conjunction with the development of the Monterey Shale formation. This history is characterized by key episodes of technological innovation in which the industry has risen to meet worldwide demand for its product. This innovation and increased production are often coupled with increased economic vitality for the local economy.

Onshore exploration in Santa Barbara County began as early as 1886 in Summerland. Oil fields in Santa Maria, Orcutt, and Cat Canyon were discovered in the late 1890s and early 1900s. Many of these fields started production very quickly, with the Orcutt field reportedly producing over one million barrels in the first 100 days of operation.

Throughout the early 1900s, onshore oil production was a large contributor to economic growth for the entire region. The 1920s saw increased economic prosperity as well as greater exploration of local oil fields, and although the US entered the Great Depression in 1929, increased foreign demand for US oil kept local production high throughout the 1930s as well. The late 1940s and 1950s saw the last significant period of onshore oil exploration when five fields were discovered in the Cuyama Valley. A notable event was the construction of Orcutt Junior High School in 1921, which was overseen by Union Oil

¹ Much of the information from this section was compiled using the following source:
<http://www.sbccountyplanning.org/energy/information/history.asp>.

engineer Ralph Dunlop. Union Oil provided funding and material to build the school that housed 280 pupils when it opened.²

Beginning in the 1950s, the industry's focus in the region shifted towards new, offshore developments until rising oil demand in the early 1970s caused the maturing onshore fields to be examined once again. Through enhanced production methods and techniques designed to reach oil that was previously unrecoverable, output and employment in the industry continued to grow throughout this time.

The 1980s brought tremendous economic turbulence to the nation as a whole, and resulted in depressed demand for oil and, in-turn, a reduction in output for the industry locally. In 1986 the onshore industry took a major hit, as the price of a barrel of crude oil fell from 22 to 6 dollars as a result of Saudi Arabia's decision to aggressively increase market share in the world oil market. As a result, many oil fields closed down, especially in Santa Maria. For the next 15 years, the onshore oil industry continued to slow before, once again, new technological advances allowed onshore production to return to viability.

Onshore oil production has increased 22% since 2001, led by new technologies that allowed previously unreachable oil and gas to be converted into a viable and economically beneficial resource. The U.S. Government has reported that 'approximately 15.4 barrels of technically recoverable oil' exist in the Monterey Shale formation in California, equating to more than two-thirds of all known US shale oil reserves³.

In addition to the Monterey Shale formation, California has significant petroleum contained within the diatomite reservoir. According to the U.S. Department of Energy, the diatomite reservoir holds between 12-80 billion barrels of original-oil-in-place. Further they cite that "steam injection successfully unlocks these resources".⁴ Cyclic steam injection has been used in California since the 1960s and has been employed as a commercial technique to recover oil from diatomite since the mid 1990s.⁵ Oil produced from the diatomite reservoir in California (both in the San Joaquin Valley and along the coast) represents a growing percentage of the total oil produced onshore in California. In 2011, diatomite oil production was approximately 75,000 barrels of California's total daily production of 505,000 barrels, or roughly 15%.⁶ In Santa Barbara County, on average 1700+

² Source: Nelson, Bob. *Old Town Orcutt, a Small California Oil Town Remembered*. Orcutt Historical Committee, 1987.

³ Source: U.S. Energy Information Administration, *Emerging Resources: U.S. Shale Gas and Shale Oil Plays*, July 2011.

⁴ Source: National Energy Technology Laboratory, U.S. Department of Energy. *DOE's Enhanced Oil Recovery Program: An Archive of Important Results*, p. 73.

⁵ Source" Prats, Michael, *Thermal Recovery*, USA: American Institute of Mining, Metallurgical, and Petroleum Engineers Inc., 1982, p. 3.

⁶ Source: Elas, R, M. Wilson, G.D. Vassilellis, and Vivian Bust, *Successful Thermal Recovery of Heavy Oil from and Ultratight Reservoir Renews Development of the 100-Year-Old Orcutt Oil Field*, Society of Petroleum Engineers Annual Technical Conference and Exhibition, September 2010, Florence, Italy.

barrels per day are being produced from the diatomite reservoir, with that amount expected to increase significantly over the next decade.

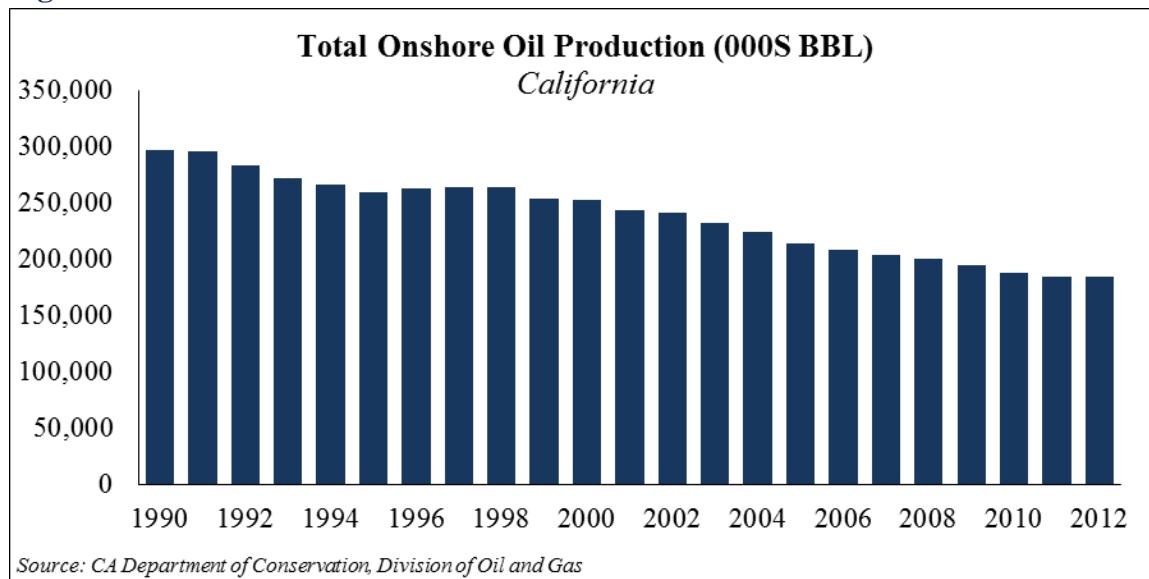
With the worldwide demand for energy growing, these resources represent a significant source of potential economic growth for the county that is deeply coupled with the development of new production technologies.

State and Local Industry Trends

Oil Production

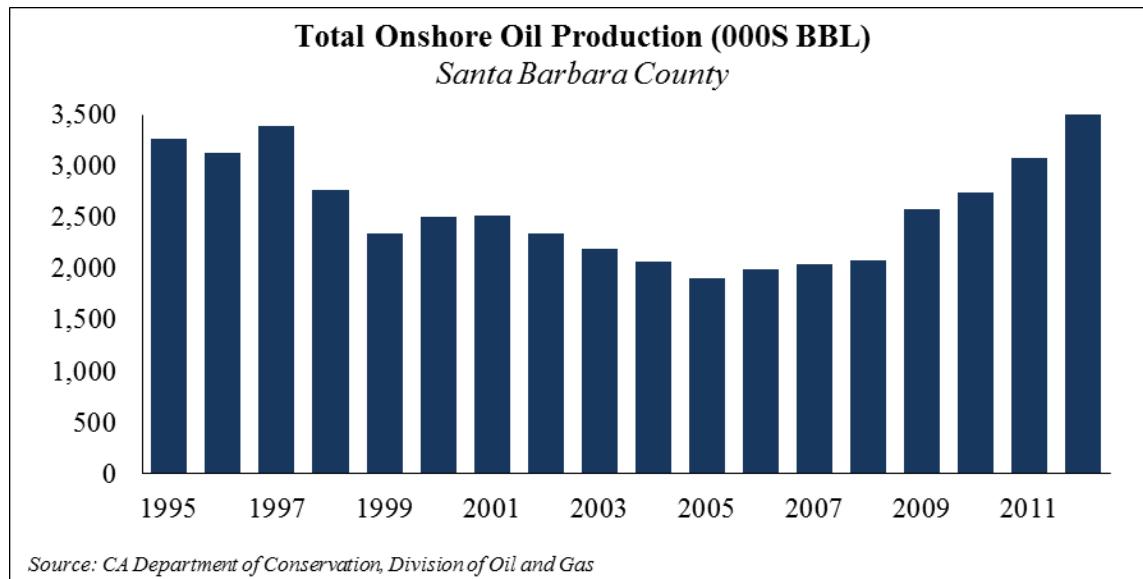
Onshore oil production in California has been falling since 1990. In the mid 1990s, there was a slight recovery where production stagnated instead of declining, but this trend did not continue and onshore oil production steadily fell from 1998-2010. In more recent years (2011-2012), oil production appears to be stagnating again; currently the state of California produces around 184 million barrels of oil.

Figure 2: Total Onshore Oil Production in California



Onshore oil trends in Santa Barbara County differ from those in California as a whole. There was a significant drop in production from the mid 1990s to the mid 2000s; 2005 was the lowest production year in recent history. However, the industry began to pick back up in 2009 and production has grown by 75 percent over the last four years. Onshore oil production in Santa Barbara County is currently around 3.7 million barrels of oil and is at the highest production level in the past fifteen years.

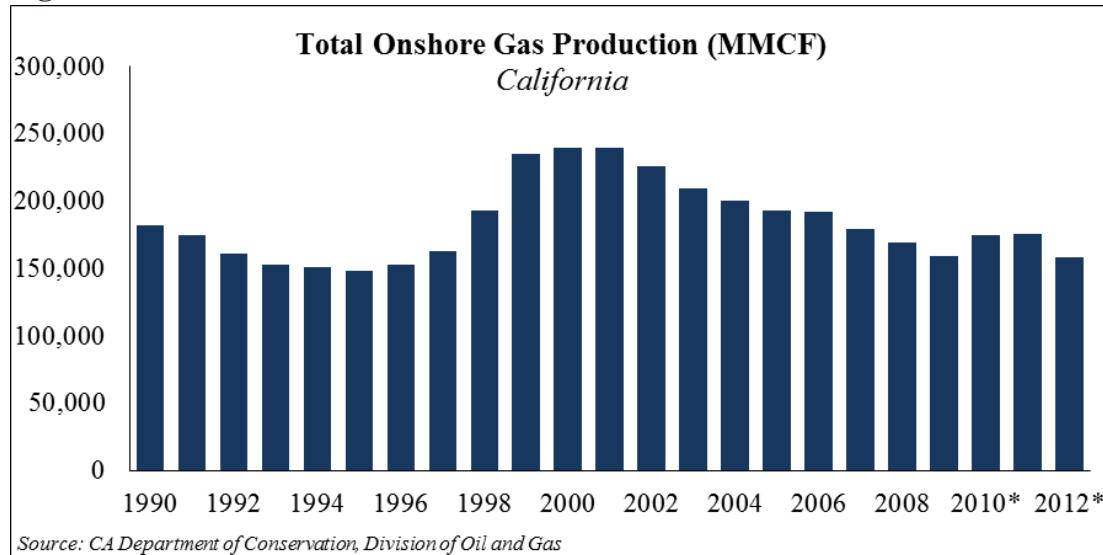
Figure 3: Total Onshore Oil Production in Santa Barbara County



Gas Production

Onshore gas production in California can be seen in Figure 4 and has been much more volatile than onshore oil production. The early and mid 1990s saw a slight fall in production which was followed by a sharp increase in the late 1990s. Subsequently, onshore gas production began to fall again; it has continued to decline and is currently at 1990s levels.

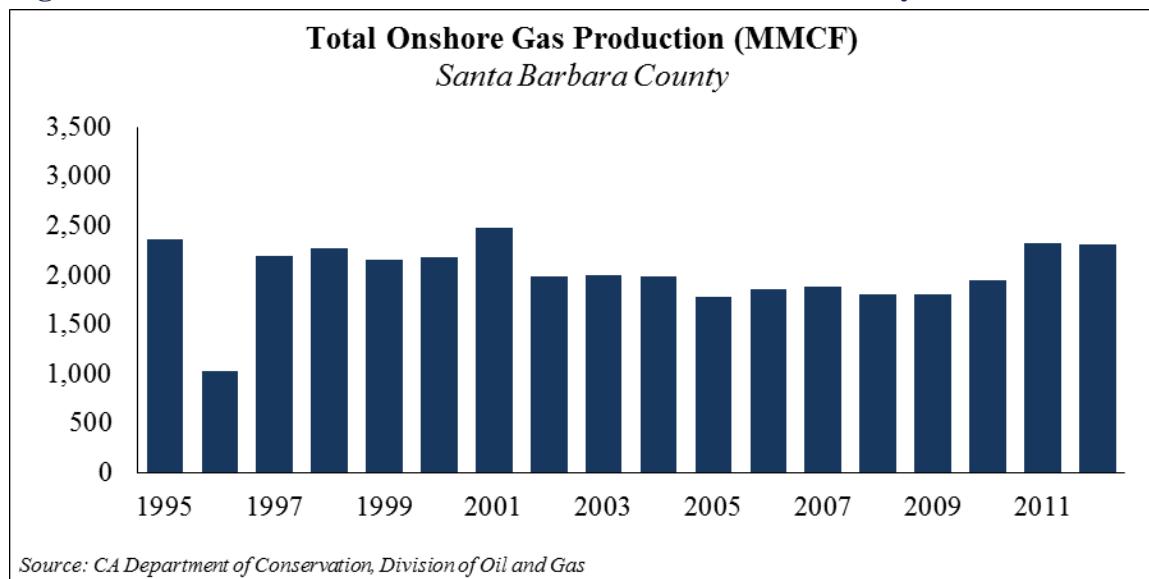
Figure 4: Total Onshore Gas Production in California



Onshore gas production in Santa Barbara County can be seen in Figure 5 on the following page and is significantly less volatile compared to California. Production in Santa Barbara County has been stable with one major outlier year (1996). The late 1990s and

early 2000s saw the highest levels of production; production declined slightly in the years following but the most recent years of data suggest a return to early 2000s levels.

Figure 5: Total Onshore Gas Production in Santa Barbara County



Wages and Employment

While the onshore oil and gas industry is generally a small contributor to total employment in the county, it provides an important source of high-wage jobs in an economy that is projected to predominately add low paying professions in the near future. When the California Employment Development Department (EDD) released occupation projections in 2008, they projected that almost all of the growth would occur in occupations where the annual salary was less than \$25,000.

In their written report, the California EDD suggested that growth would be tempered by declining rates of employment in mining and logging (the same category for oil and gas industries), manufacturing, and information. What has actually happened since 2008 is much different than what was predicted. Figure 6 shows the major industries in Santa Barbara County in terms of employment as well as the growth rate in employment for each industry.

Two of the sectors that were supposed to be responsible for tempering growth in the county have had the highest growth rates of any industry in Santa Barbara County. The employment growth rate in mining was an astonishing 44% over the time period 2009-2012.

Figure 6: Employment Occupation Projections, 2008-2018

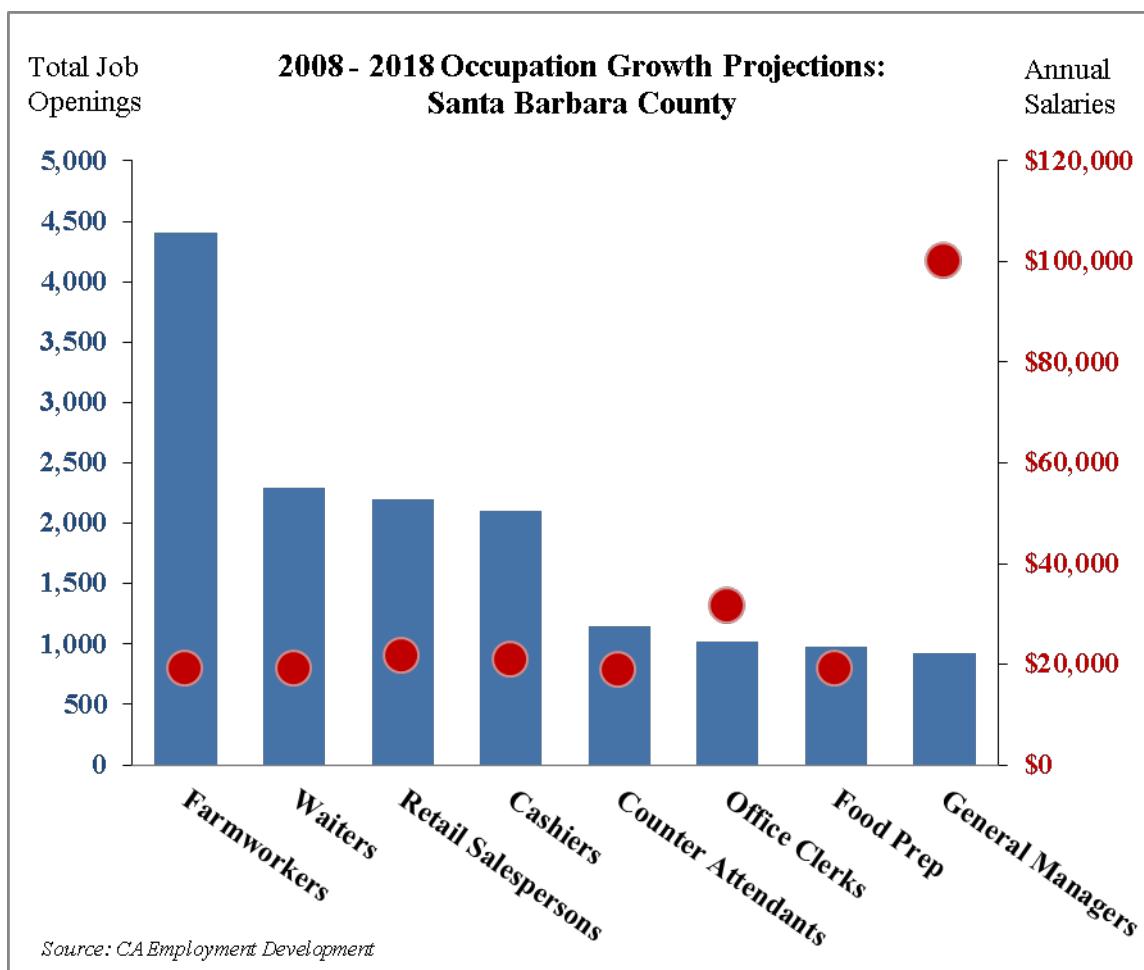


Figure 7: Employment Growth in Santa Barbara County, 2009-2012

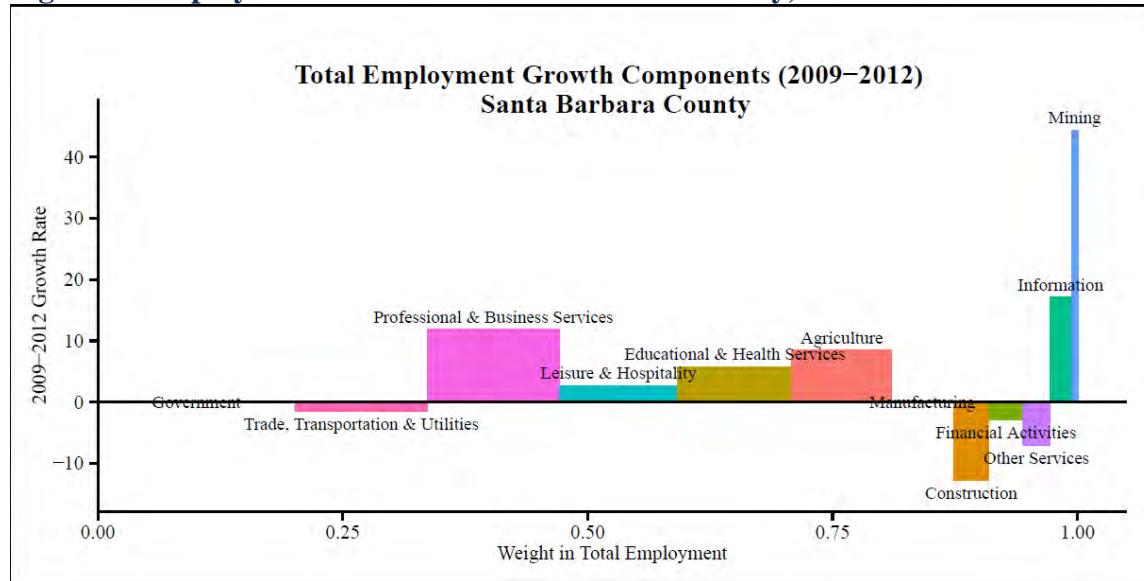


Figure 8 presents more details about employment in Santa Barbara County's mining industry. Annual employment fell steadily between 1990-2003. Since that time, employment has experienced growth followed by decline and most recently growth again.

On average, salaries in the mining industry are high. Figure 8 also depicts average salaries in the mining industry in Santa Barbara County. In real terms, salaries have remained consistently high since 1990. Recent growth in wages led to an average salary of almost \$82,000 in 2011 after controlling for inflation. The high wages in this industry contrast with the projected low-wage employment growth. Moreover, the salaries in the mining industry are also higher the median household income in Santa Barbara County of \$58,000.

The onshore oil and gas industry in Santa Barbara County follows this pattern. Figure 9 below presents the estimated number of employees by annual income in 2011 for all onshore oil and gas operations within the county. It is apparent that the largest number of employees (almost 100) earn between \$50,000-\$75,000 annually. Over half of employees (56%) earn \$75,000 or more.

Figure 8: Annual Employment and Wages in the Mining Industry

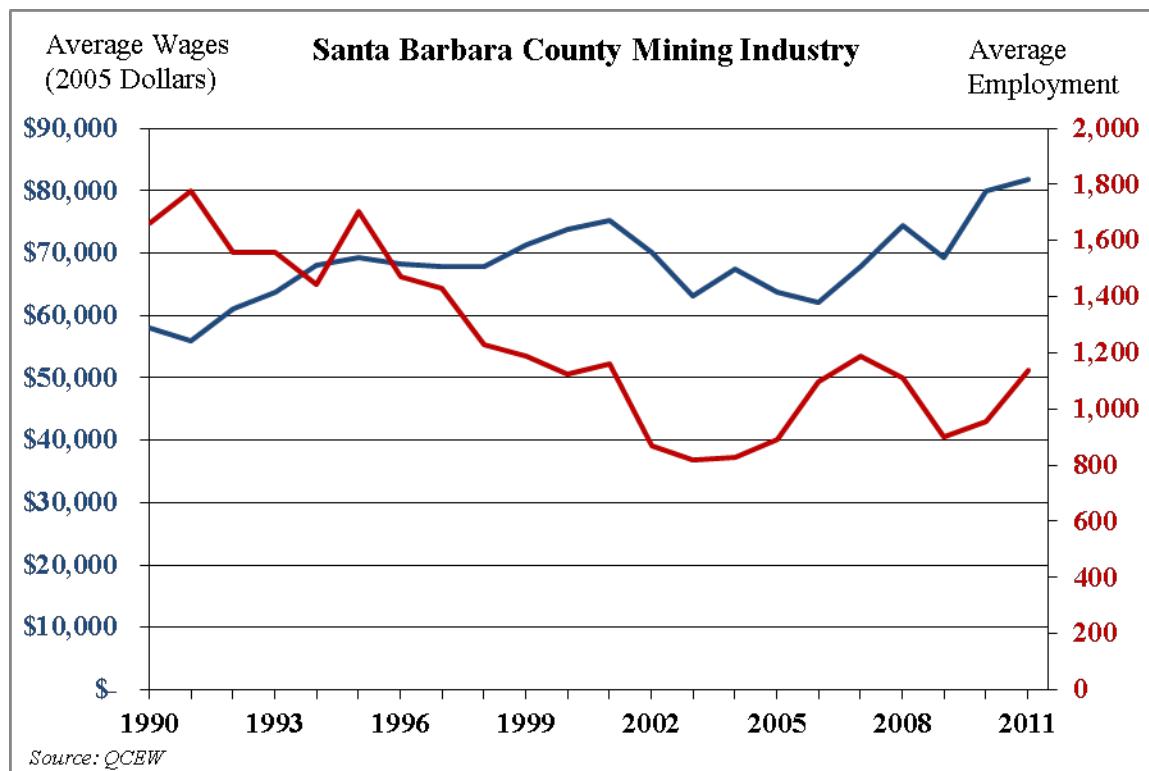
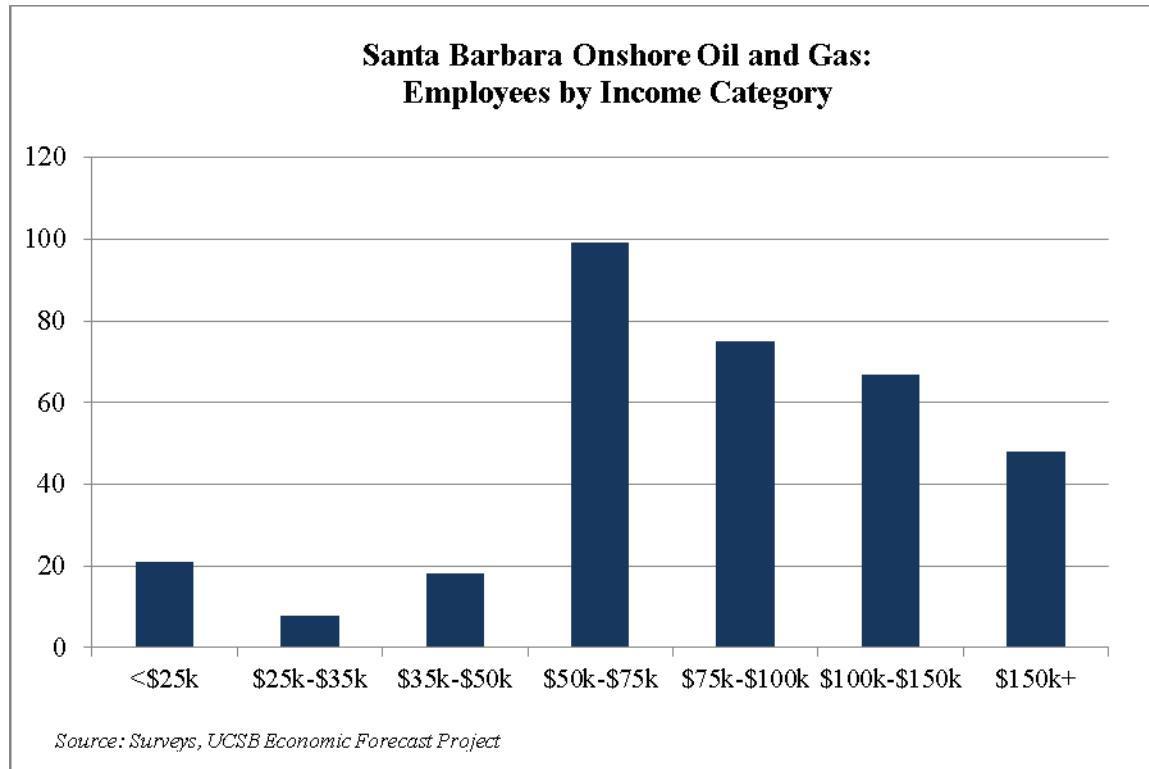


Figure 9: Employees by Income Category



Community Impacts

In addition to the economic impacts discussed throughout the report, the Santa Barbara onshore oil and gas industry has a substantial impact on the local community through its philanthropic activity. Many industry participants are active in their support of local charities and other non-profit organizations. This support is mainly captured through the amount of charitable contributions, but also includes many other forms that are difficult to quantify, including hosting non-profit events and other non-monetary sponsorships.

Through direct surveys collected from local onshore oil and gas operations, we estimate that the industry as a whole annually contributes approximately \$1.13 million in charitable contributions across 240 non-profit organizations within Santa Barbara County. This implies an average contribution of \$4,700 per organization.

Methodology

The goal of this study is to capture the total economic impact of the onshore oil and natural gas industry operating in Santa Barbara County on the Santa Barbara County economy through the industry's *backward linkages*. Backward linkages measure the effect of the industry's purchases of intermediate inputs, investment in new structures and equip-

ment, and employment within the county. This section describes the methodology in calculating the economic impact including the study area definition, modeling software, data sources, and estimations used to construct industry-level aggregates.

Study Area Description

We define the study area as all onshore oil and gas operations that occurred within Santa Barbara County in 2011. These operations form a sub-component of *National American Industry Classification System* (NAICS) industry 21111 – Oil and Gas Extraction, defined below.

NAICS 21111. Oil and Gas Extraction. *This industry comprises establishments primarily engaged in operating and/or developing oil and gas field properties and establishments primarily engaged in recovering liquid hydrocarbons from oil and gas field gases. Such activities may include exploration for crude petroleum and natural gas; drilling, completing, and equipping wells; operation of separators, emulsion breakers, de-silting equipment, and field gathering lines for crude petroleum and natural gas; and all other activities in the preparation of oil and gas up to the point of shipment from the producing property. This industry includes the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands, the production of natural gas, sulfur recovery from natural gas, and the recovery of hydrocarbon liquids from oil and gas field gases.*

As a result of the definition above, the onshore oil and gas industry is identified as all operations that have either onshore production or exploration activity within Santa Barbara County in 2011. The California Department of Conservation (CADC) classifies oil and gas operations by district and county code. Our study area covers CADC District 3, API county code 083. This covers all onshore oil and gas production in Santa Barbara County under state jurisdiction. While there does exist federally owned or operated onshore oil and gas production in California, there were no such operations in 2011 within District 3, API code 083. There are 10 onshore oil and gas fields included in the study area. These include: Barham Ranch, Careaga Canyon, Casmalia, Cat Canyon, Cuyama (South), Lompoc, Orcutt, Russell Ranch, Santa Maria Valley, and Zaca.

We define production activity as having a positive amount of oil or gas produced within the study area in 2011. Additionally, we define exploratory activity as having a positive amount of notices submitted or permits received to or from the State of California to drill or rework an oil or gas well in 2011.

Using publicly available production and permit data described below, we identify 16 operators that had activity in our study area in 2011.⁷ These include: Aera Energy, B.E. Conway Energy, Breitburn Energy Partners, E&B Natural Resources, ERG Resources, Greka, Off Broadway Mineral Rights, Pacific Coast Energy Company, Plains Exploration and Production Company, Pyramid Oil Company, Santa Maria Energy, Sierra Resources, Southern California Gas Company, Underground Energy, Vaquero Energy, and Venoco.

IMPLAN

The modeling software used for the economic analysis was IMPLAN Pro™, an input-output model first developed by the U.S. Forest Service, the Bureau of Land Management and the Federal Emergency Management Agency for use in land planning and resource management. Input-output models are accounting tables tracing the linkages of inter-industry purchases and sales in a specific study area, and they are used to calculate the effects per dollar of spending on jobs, income, and output in that specific area. These models produce estimates of local spending impacts (referred to as multipliers) using these inter-industry linkages.

IMPLAN uses information about the types and amounts of production factors – raw materials, labor, and intermediate goods – needed to produce any given output. IMPLAN uses dollar valuations of these inputs, and traces the currency flows from the original purchases of goods as they work their way through the study area economy.

In input-output terminology, an initial expenditure (such as a payment to a local company for raw materials) is referred to as a *direct impact*. The entity receiving the payment of that initial expenditure is expected to buy some of its inputs locally. Those purchases by the impacted entity attributable to the increase in business generated by the initial expenditure are referred to as an *indirect impact*. Finally, employees of the firms that are impacted both directly and indirectly are expected to spend some of their income locally. The additional local spending by these employees generated through this mechanism is referred to as *induced impact*.

Data Description

The study was completed using a combination of publicly available data for employment, oil and gas production, and permit information in addition to private data collected by the UCSB Economic Forecast Project (EFP) directly from oil and gas companies through surveys and accounting documents.

⁷ Southern California Gas Company is excluded from the analysis. We were not able to obtain any expense information from Southern California Gas Company; therefore we were unable to accurately estimate the industry level expenses for this type of company.

In terms of public data, employment information comes from the California Employment Development Department (EDD). Specifically, we rely on the Major Employers by County database provided to the EDD by Infogroup. The Major Employers by County database provides firm-level employment information by county and detailed industry. Annual oil and gas production data is obtained from the California Department of Conservation (CADC) via their online production and injection query. The CADC provides the annual amount of oil (bbl), water (bbl), and gas (mcf) produced by county, field, operator, and well on a monthly basis. The CADC additionally provides the number of notices filed and permits obtained by oil and gas operations to drill a new well, rework an existing well, or abandon a well. This information is obtained through the CADC's weekly summary of notices received and permits issued to drill, rework, and abandon wells (bulletin number PR4S). The weekly data is disaggregated by district, field, operator, and well level.

In addition to publicly available data, the EFP directly contacted a sample of onshore oil and gas operators within Santa Barbara County to obtain further information regarding detailed expenditures, employment, wages and earnings, royalty payments, tax payments, production, and charitable contributions. In order to obtain detailed expenditure information, we requested that each company supply the EFP with their annual chart of accounts regarding all operations occurring within Santa Barbara County in 2011. A chart of accounts is a list of all the accounts used by the operator to classify expenditures. Information on employment, wages and earnings, royalty payments, tax payments, production, and charitable contribution were collected from written surveys. The survey is reproduced in Appendix A.

Sample Collection and Aggregation

As discussed in the section above, the input-output model requires a detailed account of the expenditure flows from the onshore oil and gas industry in Santa Barbara County to other industries. Since this type of information is not publicly available, we use data from a sample of operators and then aggregate to the industry level. This section describes this sampling and aggregation process.

Sample

The sample consists of detailed expenditure information for 7 out of the 16 total operators with activity in the study area collected directly from accounting documents. In general, each operator's expense information is broken into four sub-categories: general and administrative expenses, lease operating expenses, exploration expenses, and capitalized expenditures. General and administrative expenses include items relating to the function-

ing of the office environment; items include rent on buildings, office supplies, travel and entertainment, etc. Lease operating expenses refer to the expenses incurred maintaining the oil and gas lease; items include contract well services, fuel, supplies, etc. Costs related to exploration fall under exploration expenses or capitalized expenditures; the allocation depends on whether the well has proved resources and whether the operator uses a full-cost or successful-efforts accounting framework. For the purposes of this study, we combine exploration and capitalized expenditures together to form one expense category.

Within each expense category, the sample includes a further breakdown into separate accounts. For example, an account under the general and administrative expense category could be “software user licenses”. For each account, the EFP classified the expenditures into individual IMPLAN sectors. For example, the account “software user licenses” are categorized under IMPLAN industry 345 – Software Publishers. In the event that an account falls under several IMPLAN sectors, EFP equally assigned the account value to all relevant IMPLAN sectors.

Table 2: Production and Permits for All Operators in Study Area, 2011

Operator	Oil Production (bbl)	Gas Production (mcf)	Drill & Rework Notices (#)
Aera Energy	0	0	4
B.E. Conway Energy	67,980	47,605	0
Breitburn Energy	0	0	36
E&B Resources	266,199	386,105	16
ERG Resources	285,144	49,526	18
Greka	641,626	398,323	4
Off Broadway	1,939	104	0
PCEC	1,003,245	740,609	0
Phoenix	0	0	16
PXP	239,509	189,317	17
Santa Maria Energy	138,107	262,863	15
Sierra Resources	177,689	281,674	1
Underground Energy	2,805	0	1
Vaquero Energy	0	0	16
Venoco	0	0	1
Unallocated Portion	9,845	26,101	0
Total	2,836,846	2,357,161	145

Aggregation

Table 2 reports the total annual production of oil and gas as well as the total number of drill and rework notices for each of the 16 operators identified as being active in the study area. Some operators have both production activity and development activity (measured as a positive amount of drill or rework notices filed). Some operators, however, had no production in 2011 but were still developing oil and gas wells for possible future production. Other operators only produced and had no measurable development activity.

The development of oil and gas wells is an important contribution to the direct impact of the onshore oil and gas industry since it results in the flow of expenditures from oil and gas operators to other industries within the study area. However, operators that are strictly in the developmental stage potentially have a different breakdown of expenditures than operators that are both producing and developing wells.

In order to accurately aggregate from sample observations to the industry-level, we classify each operator into one of three categories: **production and development**, **production only**, and **development only**. Operators in the **production and development** group had recorded oil and gas production as well as recorded notices to drill or rework wells. Operators in the **production only** group had no observable drill or rework notices, but had positive production values in 2011. Lastly, operators in the **development only** group, had no production in 2011, but had a positive amount of drill or rework notices filed. Tables 3 through 5 describe this classification.

Table 3: Production and Development

Operator	Oil Production (bbl)	Percentage of Total (%)	Drill & Rework Notices (#)	Percentage of Total (%)
E&B Resources	266,199	15.1	16	22.2
ERG Resources	285,144	16.2	18	25.0
Greka	641,626	36.4	4	5.56
PXP	239,509	13.6	17	23.6
Santa Maria Energy	138,107	7.9	15	20.8
Sierra Resources	177,689	10.1	1	1.4
Underground Energy	2,805	0.2	1	1.4
Unallocated Portion	9,845	0.6	0	0
Total	1,760,844		72	

Table 4: Production Only

Operator	Oil Production (bbl)	Percentage of Total (%)
B.E. Conway	67,980	6.3
Off Broadway	1,939	0.2
PCEC	1,003,245	93.2
Pyramid	2,838	0.3
Total	1,076,111	

Table 5: Development Only

Operator	Drill Notices (#)	Percentage of Total (%)
Area	4	5.5
Breitburn	36	49.3
Phoenix	16	21.9
Vaquero	16	21.9
Venoco	1	1.4
Total	73	

The highlighted rows indicate the operators that form the observed sample within each category. In the production and development group, we have observations for 53% of the total group production of oil and 93% of the total amount of drill and rework permits. Likewise, we have observations for 93% of the total production in the production only group and only 5.5% of the total number of drill and rework permits in the development only group. Due to the low percentage of observations for the development only group, our baseline economic impacts are estimated omitting this group. However, we show additional results including this activity.

In order to aggregate IMPLAN sector expenditures from our sample to the study area population, it is necessary to determine an appropriate *aggregation factor*. An aggregation factor is the number used to multiply sample information to form an estimate of the entire population. Our strategy is to define these aggregation factors separately by group and expenditure type.

As discussed above, our sample expenditure information is formed into four broad categories: general and administrative expenses, lease operating expenses, exploration expenses, and capitalized expenditures. General and administrative expenses are aggregated by total employment within the county. Lease operating expenses are aggregated according to oil production levels. Exploration expenses are aggregated according to the volume of drill and rework notices. For the production and development group, capitalized expenditures are aggregated according to both oil production and drill and rework notices, while for the production only and development only groups, capitalized expenditures are aggregated by oil production and drill and rework notices, respectively.

For each group and expense category defined above, the aggregation factor is defined as the ratio of the group total to the sample total. For example, to aggregate general and administrative expenses for the production only group, we define the aggregation factor as

the ratio of the number of employees (in Santa Barbara County) for all operators within the production only group to the number of employees for all operators in the sample.

Royalties

An additional, significant impact of the onshore oil and gas industry is through royalty payments. We estimate that the onshore oil and gas industry annually pays \$32,583,589 in royalties to lease owners in Santa Barbara County. These payments are treated as labor income and contribute to the economic impact through the additional spending these payments induce. However, unlike typical labor income such as wage payments, royalty payments may not all go to households living within Santa Barbara County. We consider two scenarios below. In the baseline scenario we assume that only half of all royalty payments go to households living within the county. We also show additional results in which all payments go to households within the county.

Total Economic Impact

This section presents the estimated total economic impact of the onshore oil and gas industry on Santa Barbara County's economy. As described below, the onshore oil and gas industry has a widespread impact throughout many sectors in Santa Barbara County. The total impact includes the **direct impact** through the initial expenditures described above, the **indirect impact** through the jobs created and value added occurring throughout the supply chain, and the **induced impact** through the additional spending that occurs as a result of increased labor income.

Table 6: Direct, Indirect, and Induced Economic Impacts

Impact Type	Employment	Output
Direct Effect	957.5	\$149,244,962
Indirect Effect	280.3	\$46,054,141
Induced Effect	716.2	\$96,055,861
Total Effect	1,953.9	\$291,354,963

Note: Impacts stated in 2013 dollars.

The estimated impact to the Santa Barbara County economy directly attributable to the onshore oil and gas industry in 2011 was \$149.2 million. These direct expenditures in the county supported an estimated 957 jobs. This led to indirect impacts of \$46.1 million and induced impacts of \$96.1 million. These further impacts supported an additional 996 jobs in the county.

The total economic impact of the onshore oil and gas industry on Santa Barbara County's economy in 2011 was \$291.4 million. The corresponding output multiplier of the industry is 1.95. This implies that for each dollar the onshore oil and gas industry directly contributed to output, an additional \$0.95 was generated by the activity of its suppliers and employees. In addition to the industry's payroll employment, which we estimate to be 336, the industry's activity supported 1,953 jobs in 2011. This corresponds to a jobs multiplier of $1953.9/957.5 = 2.04$. This implies for each job directly supported by the onshore oil and gas industry through direct expenditures, another 1.04 jobs are created through the additional economic activity.

Output Impacts by Sector

The sectors most affected by the activity of the onshore oil and gas industry are for services related to well and lease development and maintenance. General support activities for oil and gas operations are impacted by \$39.5 million. Drilling services for oil and gas wells are impacted by \$22.6 million. Other sectors heavily influenced include architectural, engineering, and related services (\$18.4 million), non-residential construction (\$17.3 million), and wholesale trade (\$14.8 million). Table 6 shows the top ten industries whose output is most affected by onshore oil and gas activity.

Table 8 shows all sectors affected by the onshore oil and gas industry in terms of percent of total output impact. Of the \$291,354,963 total output impact of the oil and gas industry, almost 22 percent occurred in the mining, quarrying, and oil and gas extraction sector. Professional, scientific, and technical services accounted for roughly 14 percent of total output impact, while real estate and rental and leasing accounted for approximately 11 percent.

Table 7: Total Output Impact by Sectors, Top 10

Sector	Total Output Impact
Support activities for oil and gas operations	\$39,478,099
Oil and gas well drilling services	\$22,640,304
Architectural, engineering, and related services	\$18,390,963
Nonresidential commercial construction	\$17,293,622
Wholesale trade	\$14,799,655
Imputed rental activity for owner-occupied dwellings	\$13,915,707
Real estate establishments	\$10,722,415
Legal services	\$10,427,622
Maintenance & repair of nonresidential structures	\$9,812,608
State and local government enterprises	\$9,322,907

Note: Impacts stated in 2013 dollars.

Table 8: Percent of Total Output Impact by NAICS Sectors

NAICS Sector	% of Total Output Impact
Mining, quarrying, and oil and gas extraction	21.9
Professional, scientific, and technical services	14.4
Real estate and rental and leasing	10.8
Construction	9.6
Health care and social assistance	6.0
Wholesale trade	5.1
Finance and insurance	4.5
Public administration	4.2
Retail trade	4.0
Accommodation and food services	3.3
Utilities	2.7
Manufacturing	2.6
Administrative and support and waste management	2.1
Other services	2.1
Information	1.8
Transportation and warehousing	1.8
Management of companies and enterprises	1.2
Arts, entertainment, and recreation	0.8
Educational services	0.8
Agriculture, forestry, fishing, and hunting	0.3

Employment Impacts by Sector

In terms of employment, the onshore oil and gas industry supported 284 wholesale trade jobs, or 14.6% of the total employment impact of 1,953. These impacts are heavily influenced by the reliance of the onshore oil and gas industry on wholesale trade for raw materials. Other affected industries include support activities for oil and gas operations (161 jobs), architectural, engineering, and related services (122 jobs), and non-residential construction (117 jobs).

Table 9: Total Employment Impact by Sectors, Top 10

Sector	Total Employment Impact
Wholesale trade	284.7
Support activities for oil and gas operations	161.6
Architectural, engineering, and related services	122.3
Nonresidential commercial construction	117.7
Food services and drinking places	110.4
Maintenance & repair of nonresidential structures	72.3
Real estate establishments	67.7
Securities, commodity, and investment services	61.6
Legal services	56.6
Offices of physicians, dentists, and other health services	45.9

Tax Impacts

The IMPLAN model also generates the estimated impact on federal, state, and local tax revenue as a result of the economic impacts discussed above. The results are reported in the tables in Appendix B. The backward linkages of the onshore oil and gas industry support an estimated \$41.6 million in tax revenue annually. This represents all tax revenue as a result of the spending and employment of the industry. This total is added to the estimated \$7.6 million in direct taxes paid by the industry in the form of ad valorem, property, and other taxes. In sum, the tax impact of the industry was \$49.2 million. It is important to note that this number does not include further governmental fees that operators pay regularly for compliance or permitting.

The federal tax revenue impact is estimated to be \$25.3 million, or 59% of the total impact through backward linkages. A significant portion of that total is in the form of social insurance taxes (i.e. Medicare) paid by employers and employees of \$12.7 million and personal income taxes paid by households of \$7.7 million. Federal corporate profit tax revenue is impacted by \$1.2 million.

The state and local tax revenue impact is estimated to be \$17 million. The largest component is generated by property taxes paid by businesses. We estimate the impact on property tax revenue to have been \$9 million in 2011. State sales tax is also significantly affected by \$4.7 million. Other tax revenue impacts are taxes drawn from corporate dividends of \$957,000, other indirect business taxes of \$940,000, and other tax revenue in the form of fines or fees paid by corporations of \$849,000.

Table 10: Estimated Tax Impacts

Description of Tax	Estimated Contribution
Federal Taxes	
Social Insurance Tax- Employee Contribution	\$6,853,316
Social Insurance Tax- Employer Contribution	\$5,863,910
Indirect Business Tax: Excise Taxes	\$1,313,922
Indirect Business Tax: Custom Duty	\$425,092
Indirect Business Tax: Fed NonTaxes	\$1,128,059
Corporate Profits Tax	\$1,247,584
Personal Tax: Income Tax	\$7,707,801
Total Federal Tax	\$24,539,684
State and Local Taxes	
Dividends	\$957,100
Social Insurance Tax- Employee Contribution	\$67,004
Social Insurance Tax- Employer Contribution	\$166,429
Indirect Business Tax: Sales Tax	\$4,070,090
Indirect Business Tax: Property Tax	\$9,020,492
Indirect Business Tax: Motor Vehicle License	\$17,170
Indirect Business Tax: Severance Tax	\$23,263
Indirect Business Tax: Other Taxes	\$939,700
Indirect Business Tax: S/L NonTaxes	\$849,259
Corporate Profits Tax	\$27,494
Personal Tax: Income Tax	\$234,231
Personal Tax: Non-taxes (Fines and Fees)	\$564,454
Personal Tax: Motor Vehicle License	\$13,076
Personal Tax: Property Taxes	\$59,212
Personal Tax: Other Tax (Fish/Hunt)	\$23,284
Total State and Local Taxes	\$17,032,261
Note: Impacts stated in 2013 dollars.	←

How Santa Barbara County Taxes Petroleum

Oil and gas companies producing onshore in Santa Barbara are taxed by the assessed property taxes on land and structures as well as inspection fees of equipment. Property taxes equate to a 1% tax on the assessed value of the land and structures. This includes any improvements and the value of the right to extract minerals from the property. Santa Barbara County reports that in 2010, it collected approximately \$8 million in property taxes from onshore oil production land and infrastructure. An additional \$318 thousand was collected from fees for inspection wells and tanks.⁸

⁸ Source: Oil Production Tax Proposal: Staff Report to the Board of Supervisors on Oil Production Tax Options, *County of Santa Barbara*, 2012

Additional Scenarios: Development Activity

A significant amount of economic activity by the onshore oil and gas industry occurs before any oil or gas is produced. Out of the total of 145 notices to drill or rework rigs filed for Santa Barbara County in 2011, 73 of those permits were filed by operators that had no recorded production in 2011. These operators correspond to the development only group described above. This section describes the resulting direct, indirect and induced economic impacts when including this group in the analysis.

Table 11: Impact of Alternative Scenario: Development Only Group Included

Impact Type	Employment	Output
Direct Effect	1,133.7	224,323,746
Indirect Effect	422.6	69,000,785
Induced Effect	811.3	108,808,684
Total Effect	2,367.6	402,133,214

When including this additional activity into the analysis the estimated impacts increase. The direct impact on the Santa Barbara County economy is \$224.3 million. This leads to an indirect impact of \$69 million and an induced impact of \$108.8 million. The total estimated economic impact is \$402.1 million.

The increased economic impacts correspond to an equally greater estimated impact on employment. The direct employment impact of the onshore oil and gas industry is 1,133 jobs. The indirect and induced impacts go to support an additional 422 and 811 jobs, respectively. This equates to a total employment impact of 2,367 jobs.

While the total impacts increased as a result of including the additional activity from the development only group, the output and jobs multiplier do not change significantly. The output multiplier is estimated to be 1.79 and the jobs multiplier is 2.09.

Additional Scenarios: All Local Royalties

The baseline scenario assumed that only a fraction (50%) of all royalties given to lease owners in Santa Barbara County went to households that have their primary residence in the county. It is likely that a portion of lease owners receiving royalties do not reside within the county, however the EFP was not able to accurately estimate this fraction.

Table 12: Economic Impacts of Alternative Scenario: All Local Royalties

Impact Type	Employment	Output
Direct Effect	957.5	149,244,962
Indirect Effect	280.3	46,054,141
Induced Effect	797.2	106,846,597
Total Effect	2,034.9	302,145,700

Above, we show the resulting economic impacts under the assumption that *all* royalties paid to lease owners are to households with primary residences in Santa Barbara County. It is likely that the effect of royalties on the local economy lies somewhere in between the baseline scenario and the one below.

In the model, royalties are treated as labor income. Therefore, the only difference between the estimated impacts of the baseline scenario and those above are in the induced impacts, or those impacts supported by household spending as a result of labor income. The estimated induced impact on output increases from \$96.1 million to \$106.8 million while the induced impact on employment increases from 716 to 797 jobs. This results in an increase in the total impact to output of \$302.1 million and employment of 2,034 jobs. The direct and indirect impacts are not affected. The output and jobs multiplier also increase to 2.02 and 2.13, respectively.

Conclusion

The onshore oil and gas industry represents a significant source of economic growth potential for Santa Barbara County. In 2011, the industry supported \$291.4 million in total output and 1,953 jobs. For each dollar the industry directly contributes to output, another \$.95 is added through the economic activity of its suppliers and employees. Further, for every job that is directly supported by the industry, these extra linkages support another 1.04 jobs. Direct employment in the industry is in the form of high paying jobs that are becoming scarcer.

Since 2011, onshore oil and gas production and employment have continued to grow. The impacts discussed throughout this report are generated through the production of 2.8 billion barrels of oil. In 2012, oil production was 3.7 million barrels and the total economic impacts are likely to be much higher. With the development of new production methods, onshore oil production should provide a strong source of future economic vitality to Santa Barbara County.

Appendix A: Oil and Gas Survey



Thank you for participating in the Santa Barbara County Oil and Gas survey! This survey is a crucial tool to analyze the economic impact of the oil and gas industry. *All information you provide is strictly confidential and your company's data will not be individually identified in any of the results.* Please answer the following questions to the best of your ability. All Questions refer to the calendar year of 2011.

General Questions

1. How many barrels of oil did you produce in 2011 in Santa Barbara County?
2. How many MMCF of gas did you produce in 2011 in Santa Barbara County?
3. How many charitable organizations in Santa Barbara County did you either contribute funds to and/or sponsor in some manner?
4. How many permits for new projects did you apply for in 2011 within Santa Barbara County?
5. How much did you spend on interest expenses on debt?
6. How much did you pay in taxes (ad valorem, production, severance, other)?

Wages and Earnings

1. What is the total number of people you employed directly this year working in Santa Barbara County? (This number should *not* include contract workers.)
2. How much did you spend on these employees' salaries and wages?
3. How much did you spend on these employees' benefits (including insurance)?
4. How many of these employees earned the following salaries:
 - <25,
 - 25-35,
 - 35-50,
 - 50-75,
 - 75-100,
 - 100-150,
 - 150+
5. How much did you pay in royalties within Santa Barbara County (both shut-in, minimum, proved and unproved, etc. ALL)?

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Appendix B: Additional Tables and Figures

Table 13: Industry Expenditures by Sector, Ordered by Weight in Total

IMPLAN Sector	Total Expenditures	Percentage of Total (%)
Wholesale Trade	78,479,302.59	21.8%
Support Activities for Oil and Gas Operations	57,242,047.79	15.9%
Drilling Oil and Gas Wells	46,218,436.71	12.8%
Architectural, Engineering, and Related Services	35,090,584.32	9.8%
Legal Services	25,987,397.09	7.2%
Electric Power Generation, Transmission, and Distribution	18,347,159.53	5.1%
Construction of New Nonresidential Commercial	16,637,640.89	4.7%
Maintenance and Repair of Nonresidential Structures	14,494,964.42	4.0%
Environmental and Technical Consulting Services	9,687,959.56	2.7%
Logging	7,531,647.13	2.1%
Commercial and Industrial Machinery and Equipment Rental and Leasing	4,874,325.54	1.4%
Real Estate	4,200,647.09	1.2%
Remaining Sectors <1 %	40,932,668.57	11.4%
Total Expenditures	359,724,781.20	

Table 14: Federal Tax Impacts, Detailed

	Employee Compensation	Proprietor Income	Indirect Business Tax	Households	Corporations
Personal Tax: Income Tax					\$1,247,584
Corporate Profits Tax				\$7,707,801	
Social Insurance Tax - Employee Contribution	\$5,965,332	\$887,984			
Social Insurance Tax - Employer Contribution	\$5,863,910				
Indirect Business Tax: Excise Tax			\$1,313,922		
Indirect Business Tax: Fed Non-Tax			\$425,092		
Indirect Business Tax: Customs Duty			\$1,128,059		
Total	\$11,829,242	\$887,984	\$2,867,073	\$7,707,801	\$1,247,584

Table 15: State and Local Tax Impacts, Detailed

	Employee Compensation	Proprietor Income	Indirect Business Tax	Households	Corporations
Dividends					\$957,100
Social Insurance Tax - Employee Contribution	\$67,004				
Social Insurance Tax- Employer Contribution	\$166,429				
Indirect Business Tax: Sales Tax			\$4,070,090		
Indirect Business Tax: Property Tax			\$9,020,492		
Indirect Business Tax: Motor Vehicle License			\$17,170		
Indirect Business Tax: Severance Tax			\$23,263		
Indirect Business Tax: Other Taxes			\$939,700		
Indirect Business Tax: S/L Non Taxes			\$849,259		
Corporate Profits Tax					\$27,494
Personal Tax: Income Tax				\$234,231	
Personal Tax: Non Taxes (Fines- Fees)				\$564,454	
Personal Tax: Motor Vehicle License				\$13,076	
Personal Tax: Property Taxes				\$59,212	
Personal Tax: Other Tax (Fish/Hunt)				\$23,284	
Total State and Local Tax	\$233,434		\$14,919,974	\$894,258	\$984,595

UCSB Economic Forecast Project

Dallas Cowboys' Training Camp

Economic Impact Study: City of Oxnard and Ventura County

UCSB Economic Forecast Project
December 4, 2012

Executive Summary

- 52,141 people attended the 2012 Dallas Cowboys' Training Camp. Approximately 44,644 of these people were visitors, while the remaining 7,497 attendees were residents of the City of Oxnard.
- The total economic impact of hosting the Dallas Cowboys' Training Camp was \$3.6 million. Of this total impact, \$2.2 million came from direct effects, while \$654,000 resulted from indirect effects and \$695,000 came from induced effects.
- In Ventura County, every dollar a visitor spent while visiting the training camp added 1.13 dollars to the local economy.
- The total economic impact reported in this document is derived only from visitor spending. In addition to visitor spending, the Dallas Cowboys organization spent a total of \$1.76 million on the training camp, a large fraction of which was likely spent in Ventura County. The total economic impact excludes this amount because we were unable to obtain industry breakdowns. Therefore, the total economic benefit reported is an underestimate of the true total.
- Other revenue excluded from the total economic impact included parking generated revenue (\$92,140), concession revenue (\$58,020), and revenue from the Fun Zone (\$6,578). This money went directly to local community groups including the Oxnard Police Department Explorer's Program, Oxnard City Corps, local high schools, and local youth sports teams.
- Considering only the geographic area of the City of Oxnard, the total economic impact ranged from \$1.0 to \$2.0 million. The first number represents the total impact only from spending by overnight visitors staying in Oxnard; the second number represents the total impact assuming all day visitor spending occurred within the City of Oxnard. The true estimate is in this range.
- As a result of hosting the training camp, 39 jobs (both part-time and full-time) were supported in Ventura County. 29.2 of these jobs were a result of direct effects, while 9.9 were a result of indirect and induced effects.

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1. Project Description

The City of Oxnard hosted the Dallas Cowboys' Training Camp in July and August 2012. The City has hosted this training camp for a total of six years since 2001. The Dallas Cowboys are a popular pro-football team in the Eastern Division of the National Football Conference of the National Football League. Every year, teams hold training camps during the pre-season to prepare for the upcoming football season. This year, the Dallas Cowboys' Training Camp took place from July 30, 2012 - August 17, 2012. Each day, the training camp was open to the public from 2:30-5:30, with the exception of August 2, 8, 13, and 14. Most days consisted of regular team practice, but the Cowboys held a "Blue-White" Scrimmage on August 5.

The training camp provided visitors an opportunity to see the players up close. In addition, there were several activities for visitors in the immediate vicinity of the camp: food booths, merchandise trailers, the Oxnard Convention and Visitors Bureau booth, and the children's play area (FunZone). The Cowboys did not begin practice until 2:30 each day, but the area was open at 12:30 to allow visitors ample time to visit the various activities.

2. Survey Methodology

Visitors come from all over California (and other states) to watch the Cowboys practice. When they visit the area, visitors spend on hotels, food, and entertainment in the local economy. The purpose of this study was to capture the total economic benefit to Ventura County and the City of Oxnard of hosting the Dallas Cowboys' Training Camp.

Increased visitor spending represents a large part of the economic benefit resulting from hosting the Cowboys' Training Camp. (The Dallas Cowboys organization also spends a substantial amount in the local area due to the training camp; this is discussed further in section 4.) To identify visitor spending in the Oxnard area as a result of the training camp, a survey was developed by the UCSB Economic Forecast Project (EFP), the Oxnard Convention and Visitors Bureau, and the City of Oxnard (see Figure 1 in the Appendix to view the survey). The survey asked visitors to report spending in four main categories: accommodation, entertainment, food and beverage, and gasoline. These categories were chosen to be representative of a Ventura County visitor's major purchases.

Four main training camp days were selected to distribute the surveys (opening day, the day of the Blue-White scrimmage, and one other weekday and weekend day). On each of these days, a table was set up next to the Oxnard Convention and Visitors Bureau booth with a sign that read, “Win a Signed Football”. This table was manned by volunteers and served as a geographic focal point where volunteers returned after administering surveys. Although some surveys were filled out by respondents approaching the table, the bulk of the surveys were administered by individual volunteers from the UCSB EFP and the City of Oxnard who walked around the training camp and asked individuals if they would be willing to take a short survey for a chance to win an autographed football. Each volunteer read the survey to the respondent and recorded their responses. This approach was taken to minimize errors and ensure that each survey was filled out completely.

On the remaining event days when there were no volunteers walking through camp and administering surveys, a box was set up at the Oxnard Convention and Visitors Bureau booth to collect surveys. Surveys collected in this way were filled out directly by respondents.

Surveys were collected from both residents of the City of Oxnard and visitors, but spending information was collected from visitors only. Although it is entirely possible that residents spent more as a result of the Cowboys’ training camp, it is difficult to say whether residents would have already been dining out or spending money on entertainment.

Although there were 14 days that training camp was open to the public, volunteers collected surveys on 4 days. Spending patterns of visitors on these four days were used as representative for the remaining days. Data from surveys collected on opening day were only used to provide estimates for opening day. Similarly, data from surveys collected on Sunday, the day of the Blue-White scrimmage, were only used to provide estimates for Sunday. These days had the greatest chance of attracting visitors with different spending patterns than other days of training camp, and were therefore treated as unique. For the remainder of the weekdays, an average of the data from surveys collected on Friday and surveys in which the day could not be classified were used. Surveys collected on ‘unclassified days’ were surveys that were collected in the box at the Oxnard Convention and Visitors Bureau and not collected by volunteers on a particular day. For the remainder of the weekend days, an average of the data from surveys collected on Saturday and unclassified days were used.

2.1 Sample Size

It was essential that the sample we surveyed be representative of the population of visitors attending the Dallas Cowboys' Training Camp. We followed Bartlett, Kotlik, and Higgins (2001) to determine the sample size needed for a population of 50,000. A sample size of 1,087 respondents was needed to be representative of the population with a 95% confidence level. We exceeded the number of surveys needed to obtain this confidence level and collected a total of 1,383 surveys. A 95% confidence level means that we are sure that 95% of the time a respondent chose an answer that would have been chosen by a similar proportion of the population if the entire population had been surveyed. At this confidence level, our spending averages have a margin of error of 3%.

3. Visitor Demographics

In addition to collecting information about visitor spending, the survey also asked demographic questions to determine general characteristics of the visitors to training camp. This information provides an interpretive framework that describes the average attendee. It is also useful for future advertising and event planning. Each survey question and the resulting responses are presented in the Appendix. We discuss highlights here.

An overwhelming majority (88%) of respondents were visitors to the Oxnard area. Of these, 93% listed that their primary reason for coming to the area was to attend the training camp. The 2012 training camp was the first training camp attended by a little over half of the respondents (55%). Visitors who had attended previous training camps had often attended more than one; 35% of respondents had attended at least two previous camps.

Many of the visitors to the area were die-hard fans of the Dallas Cowboys. Roughly half of the respondents (49%) heard about the training camp through the Dallas Cowboys' website. Most of the visitors came from the state of California (91%), while 3% came from Texas and 3% came from Arizona. Of the California visitors, 49% came from Ventura and Los Angeles Counties. Other counties with significant representation were Orange (7%), Santa Barbara (4%), San Bernardino (6%), Riverside (8%), Kern (8%), Fresno (5%), and San Diego (4%).

Approximately 70% of respondents planned to attend the camp only one or two days. Visitors were classified according to where they planned to spend the night. Day

visitors commuted to the training camp each day they attended and represented 46% of respondents. The remaining respondents stayed in a hotel (39%) or with family and friends (12%). A small percentage camped or stayed in a vacation rental.

While visitors were in the Oxnard area, many spent money on accommodations, gasoline, food, and entertainment. On average, overnight visitors spent more than day visitors in every category. 87% of overnight visitors planned to buy gasoline in the area; the average total amount spent was \$80. 66% of day visitors planned to buy gasoline in the area; the average amount spent was \$62. Approximately 93% of total respondents said they planned to eat out while they were in the area. 90% of day visitors said they planned to eat out; the average spent by day visitors was \$69. 96% of overnight visitors said they planned to eat out; the average spent by overnight visitors was \$100. 63% of total respondents said they would spend money on entertainment while they were in the area. 55% of day visitors said they would spend money on entertainment; the average spent by day visitors was \$162. 74% of overnight visitors said they would spend money on entertainment; the average spent by overnight visitors was \$347.

The sample of respondents tended to come from older ages. 65% of respondents were aged 40 or older. It is important to note that we attempted to ask the group head to complete the survey because of the focus on expense questions. This fact is undoubtedly reflected in the age distribution seen in the Appendix. In terms of family status, most of the respondents (52%) were married or had a partner with children. 25% of respondents were single without children, while 16% were single with children. The remaining 7% were married or had a partner without children.

In general, respondents indicated they did not have a college degree. Roughly 68% of respondents had attended some college or had a high school degree/GED. The remaining 32% of respondents held either a Bachelor's, Associate's, or Graduate degree. In terms of annual family income, 30% of respondents reported earning between \$40,000 and \$74,000 annually. Overall, 64% of respondents said they earned an annual family income of \$74,000 or less. The remaining 36% earned \$75,000 or more.

Hispanics or Latinos were represented more than any other race/ethnicity; around 59% of respondents reported that they considered their race/ethnicity to be Hispanic or Latino. 28% of respondents said they were White, while 6% said they were Black. The remaining 7% responded that their race/ethnicity was Asian or Pacific Islander, Native American, or Other.

4. Data Description

A total of 1,383 people completed a survey. The final number of surveys used for each question varied and can be seen in the Appendix. The number of surveys used fluctuated based on survey response; surveys that were incomplete usually had only one or two questions missing. These surveys were still used in the analysis except for the questions for which data was missing. A total of 31 observations were dropped from the entire dataset because of inconsistent answers; specifically, some respondents reported that they were staying with family and friends but also reported positive expenditures on accommodations. It was unclear whether these respondents were actually staying in hotels with friends and family and circled the wrong response or misunderstood what accommodations included.

Turnstiles were used at the entrance to camp to count the number of people entering the camp each day. To obtain an estimated visitor count, the proportion of visitors to camp was multiplied by the daily turnstile count. This number was further adjusted to exclude visitors who were attending the training camp but in the Oxnard area for other reasons (such as business or vacation). Our goal was to capture the total economic benefit resulting from increased visitor spending *because* of the training camp; for this reason we exclude those who say their primary reason for visiting Oxnard was something other than the training camp. Table 1 shows the number of people attending camp each day, as well as the proportion of attendees who were visitors (i.e. not residents of the City of Oxnard). These counts were used to calculate total estimates of spending on accommodations, food and beverages, gasoline, and entertainment.

4.1 Day Visitors and Overnight Visitors

Several assumptions were made to adjust the data and obtain spending estimates. A large proportion of the people attending the training camp were day visitors who were commuting to Oxnard each day they attended camp. Day visitors spent differently in the four main categories (hotels, food, gasoline, and entertainment) when compared to overnight visitors. When the difference between spending by day visitors and overnight visitors was statistically significant, averages were computed for each group and used to estimate total expenses. When the difference was not statistically significant, a total average for day visitors and overnight visitors was used instead.

Table 1.

Day	Turnstile Count	Day Type	% of Visitors	Adjusted Visitor Count*
July 30	5,266	Opening Day	86.9%	4,317
July 31	3,201	Weekday	81.1%	2,289
August 1	3,358	Weekday	81.1%	2,401
August 3	3,527	Weekday	81.1%	2,522
August 4	5,918	Weekend	85.6%	4,614
August 5	12,000+	Scrimmage	93.8%	10,927
August 6	2,657	Weekday	81.1%	1,900
August 7	3,195	Weekday	81.1%	2,285
August 9	2,645	Weekday	81.1%	1,891
August 10	2,810	Weekday	81.1%	2,009
August 11	4,574	Weekend	85.6%	3,566
August 12	1,232	Weekend	85.6%	961
August 15	1,402	Weekday	81.1%	1,002
August 16	356	Weekday	81.1%	255
Total	52,141			40,940

* Adjusted visitor counts exclude those who attended the training camp but were in the Oxnard area for business or vacation (see Section 4 on page 8 for more details).

4.2 Obtaining Per Day Spending Estimates

Many people visiting Oxnard were staying in the area for several days. When determining visitors' expenses *by day*, we use the question "How long are you staying in the Oxnard area?" (This question was answered in number of days.) In the survey, visitors were asked what their *total* expenses were on gasoline and entertainment. To calculate the *per day* estimate of entertainment (gasoline) spending, we take the total amount spent on entertainment (gasoline) and divide it by the number of days the respondent was staying in Oxnard. Visitors were directly asked how much they were spending on food per day so it was unnecessary to adjust those expenditures by day.

4.3 Hotel Spending

To determine hotel spending, we first determine the number of nights a respondent was staying in Oxnard. We use the question "How long are you staying in the Oxnard area?" and subtract 1 to obtain the number of *nights* a visitor was staying. If respondents failed to answer this question in the survey, but answered the question "How many days do you plan to attend training camp?", the answer to this question was used instead. Again, we subtracted 1 to obtain the number of nights a visitor was staying. We multiply the number of nights people were staying in the Oxnard area by the amount they were spending on hotels per night. This total was then divided by the

number of *days* a respondent stayed in Oxnard to obtain a per day estimate of hotel spending.

For expenses on hotels, entertainment, food, and gasoline, an average amount spent per visitor per day was calculated. Visitors who did not spend anything were also included in this total average. The averages by category can be seen in Table 2.

Table 2.

Amount spent on: Type of Visitor	Hotels Overnight	Entertainment Overnight	Entertainment Day
Sunday	87.10	91.54	55.52
Monday	97.77	104.44	45.57
Friday and Unclassified	99.42	88.57	88.57
Saturday and Unclassified	86.41	84.56	84.56

Amount spent on: Type of Visitor	Food Overnight	Food Day	Gasoline Overnight	Gasoline Day
Sunday	96.70	61.66	32.96	32.96
Monday	112.78	55.71	28.45	21.20
Friday and Unclassified	101.87	59.29	34.73	34.73
Saturday and Unclassified	89.89	65.64	32.52	32.52

The differences in spending by day and visitor type can also be seen in Table 2. On Sunday and Monday, overnight visitors spent substantially more on entertainment compared to day visitors, while on Friday, Saturday, and unclassified days, there was no statistical difference between day visitors and overnight visitors. Similarly, overnight visitors spent substantially more on food compared to day visitors. On all days, overnight visitors spent an average of at least \$20 more on food than day visitors. On most days, there was no statistical difference between day visitors and overnight visitors in terms of spending on gasoline. Monday was the only day that there was a statistically significant difference, with overnight visitors spending an average of \$7 more than day visitors. The remainder of the days, the average spent on gasoline was around \$33 per day. For those staying in hotels, visitors had the highest averages (\$99, \$97) on weekdays (Monday, Friday, and unclassified days), while the weekend averages were around \$90.

4.4 Adjusting for Group Size

Table 3 below shows averages for each spending category after accounting for group size. It was necessary to adjust our estimates for group size because many

respondents were answering the survey for themselves and their family or group. Several respondents noted that how much they would spend would be a direct result of what their family wanted to do. To estimate group size, we asked a sub-sample of 242 respondents how many people were in their group. This question was asked 3 of the 4 days that volunteers administered surveys. There was no statistical difference between average group size on different days, so an overall group size average of 3.07 was used. This means that the average group consisted of about 3 people. After per day estimates were computed, the average amount spent on each of the categories was divided by the average group size to obtain an estimate of how much was spent by *each person*.

Table 3. Per visitor spending adjusting for group size

Amount spent per visitor on: Type of Visitor	Hotels Overnight	Entertainment Overnight	Entertainment Day
Sunday	28.33	29.77	18.06
Monday	31.80	33.97	14.82
Friday and Unclassified	32.34	28.81	28.81
Saturday and Unclassified	28.10	27.50	27.50

Amount spent per visitor on: Type of Visitor	Food Overnight	Food Day	Gasoline Overnight	Gasoline Day
Sunday	31.45	20.05	10.72	10.72
Monday	36.68	18.12	9.25	6.90
Friday and Unclassified	33.13	19.28	11.30	11.30
Saturday and Unclassified	29.24	21.35	10.58	10.58

4.5 Total Spending Estimates

To obtain *total* spending estimates on entertainment, food, and gasoline, the averages in Table 3 were multiplied by the visitor counts in Figure 1.

Obtaining total spending estimates on hotels required another step. Visitors coming to the training camp were often staying in the Oxnard area longer than they were attending the training camp. For example, a visitor might have planned to attend camp 2 days, but stayed in the Oxnard area 4 days. In this example, if we use turnstile counts to directly calculate the amount this visitor spent on hotels, we will underestimate their total spending by two days since the respondent will only go through the turnstile twice, but will actually be spending on hotels other days. To adjust for this, we create a measure of a ‘multiplier effect’ by dividing the answer to the question “How long are you staying in the Oxnard area?” by the answer to the

question “How many days do you plan to attend camp?”. If visitors are staying in Oxnard the same number of days they are attending camp, this ratio will be one. If they are staying in the Oxnard area longer, the ratio will be greater than one. We take an average of this ratio across all people staying in hotels and obtain the multiplier effect of 1.232. In other words, on average, for each day a visitor attended training camp, they stayed in the Oxnard area 1.2 days.

Total spending on hotels was obtained by first multiplying the percentage of respondents who stayed in a hotel by visitor counts and then multiplying this number by the average spent on hotels. Finally, this number was multiplied by 1.232 (the multiplier effect described above) to obtain an estimate of total spending on hotels.

Total spending estimates for all categories are shown in Table 4.

Table 4.

Total amount spent on:	
Entertainment	
Day Visitors	\$ 502,066.71
Overnight Visitors	\$ 584,558.93
Food	
Day Visitors	\$ 416,465.66
Overnight Visitors	\$ 642,937.61
Gasoline	
Day Visitors	\$ 220,954.25
Overnight Visitors	\$ 214,838.04
Hotels	
Overnight Visitors	\$ 576,772.44
Total Spending:	\$ 3,158,593.62

5. IMPLAN Analysis

The total visitor spending in each of the four main categories (entertainment, food, gasoline, and hotels) was used in IMPLAN, an input-output matrix software, to determine the total economic impact of hosting the Dallas Cowboys' Training Camp. Before presenting the model results, we note a few important caveats of the analysis.

First, the Dallas Cowboys spent a substantial amount of money bringing their entire team and staff to Oxnard and staying in Oxnard for a little over two weeks. We were able to obtain the total amount the Cowboys spent on everything related to the training camp: \$1,755,176; however, we were not able to break this number down into any industry categories. As a result, we could not include this information in our models and are unable to assess indirect or induced impacts that resulted from the Cowboys' spending. We also cannot say that all of this money was spent in Ventura County; it is likely that the bulk of the money was spent in the county, but the Cowboys included all of their expenses in this number, including an air charter into Point Mugu airfield, hotel rooms for players and staff, food and transportation during the training camp, dry cleaning of the football uniforms, and other expenses related to the training camp. As a result, the total economic impact does not include the Cowboys' spending and will underestimate the true economic impact of hosting the training camp.

Second, the Cowboys sold a substantial amount of merchandise while they were in Oxnard. Sales tax was paid on this merchandise and was likely a significant amount since the Cowboys' unofficially claim that they usually break even between what they spend on training camp and their merchandise sales. We were unable to obtain this information and it is also excluded from this analysis. It should be noted that visitors may have included money they spent on merchandise in the survey question "How much will you spend on entertainment during your entire stay in the Oxnard area?". To the extent that this is true, the sales tax collected as a result of these sales is accounted for in the analysis.

Third, parking revenue (\$92,140), concession revenue (\$58,020), and Fun Zone revenue (\$6,578) generated as a result of the training camp were not included in the analysis. This money went directly to local community groups including the Oxnard Police Department Explorer's Program, Oxnard City Corps, local high schools, and local youth sports teams. While these amounts were excluded from the economic analysis because there was no industry breakdown of where this money was spent, it is important to recognize the impact of these funds in the local community. The

programs that were able to raise funds through the training camp focus on providing opportunities for the youth of Oxnard. While this ‘community impact’ cannot be quantified, the ripple effects resulting from the support of youth-oriented programs should not be understated.

To categorize entertainment spending in the appropriate categories, the total amount spent on entertainment was first divided according to the pie chart in Question E. shown on page 24. In particular, movies received 9% of total entertainment spending, while wineries received 4% and museums received 2%. The remainder of total entertainment spending (85%) was split among different retail venues. Using the California Board of Equalization Taxable Sales data, we calculated the percentage of stores in Ventura County in particular retail industries. These percentages were then multiplied by the remaining 85% of total entertainment spending and the resulting numbers used in the models. In doing so, we assume that training camp visitors spent proportionally according to the fraction of retail store types in the area. These percentages can be seen in Table 5. Unfortunately, we did not have sufficient detail in the survey question to be able to categorize entertainment more precisely.

Table 5.

Entertainment Expenditure Breakdown: Ventura County	
Type of Business	
Furniture and home furnishings stores	6.6%
Electronics and appliances stores	7.4%
Health and personal care stores	7.7%
Clothing and clothing accessories stores	22.0%
Sporting goods, hobby, book, and music stores	11.1%
General merchandise stores	6.0%
Miscellaneous store retailers	39.1%

Entertainment Expenditure Breakdown: City of Oxnard	
Type of Business	
Furniture and home furnishings stores	7.6%
Clothing and clothing accessories stores	11.7%
General merchandise stores	3.4%
Miscellaneous store retailers	77.3%

5.1 Ventura County Model

The total economic impact summary can be seen in Table 6. Three main categories are presented: direct, indirect, and induced impacts. Direct impacts represent the actual amount spent in the local economy. In our models, this includes expenditures on food, gasoline, entertainment, and hotels. Indirect impacts occur because the sectors impacted by direct spending have to obtain their goods from other sectors. For example, a restaurant has to purchase food from wholesale distributors to make the food that is sold in the restaurant. Induced impacts are the impacts that result from workers spending the money they earn in various sectors. For example, a worker in a restaurant needs to purchase groceries and pay rent among other expenses. These terms are defined further in the glossary.

Table 6.

Type of Impact	Employment	Output
Direct Effect	29.2	\$ 2,233,313
Indirect Effect	4.5	\$ 653,969
Induced Effect	5.4	\$ 695,200
Total Effect	39.0	\$ 3,582,482

The total economic impact of hosting the Dallas Cowboys' Training Camp was \$3.6 million. Of this total impact, \$2.2 million came from direct effects, while \$654,000 resulted from indirect effects and \$695,000 came from induced effects. This means that every dollar a visitor spent in the area while visiting the training camp had a total impact of 1.13 dollars.

Overall, a total of 39.0 jobs (both part-time and full-time) were supported by hosting the training camp. 29.2 of these jobs were a result of direct effects, while 10.9 were a result of indirect and induced effects. We use the term ‘supported’ because increased spending during the training camp does not necessarily lead to the creation of new jobs; instead, increased labor income (wages) results from the increased spending and this may be reflected in either new jobs or higher wages for existing jobs.

Different sectors were impacted differently by hosting the training camp. The two sectors that were impacted the most were the ‘Food services and drinking places’ and ‘Hotels and motels’ sectors. The training camp expenditures supported almost 19 jobs in the food services sector and 5 jobs in the hotels and motels sector. Table 7 shows the top 10 industries affected by the training camp; employment represents the number of full and part-time jobs supported by the training camp.

Table 7.

Sector	Employment
Food services and drinking places	18.2
Hotels and motels, including casino hotels	5.1
Retail Stores – Miscellaneous	2.8
Retail Stores - Clothing and clothing accessories	1.6
Real estate establishments	0.8
Retail Stores - Sporting goods, hobby, book and music	0.7
Services to buildings and dwellings	0.5
Employment services	0.5
Retail Stores - Gasoline stations	0.5
Retail Stores - General merchandise	0.4

5.2 City of Oxnard Model

The model for Ventura County was the most accurate in capturing total economic impacts of the Dallas Cowboys' Training Camp. However, the City of Oxnard is the locality that actually hosts the training camp. To investigate the impact of the training camp on the City of Oxnard, we develop two models. In models for the City of Oxnard, our goal is to capture *only the spending that occurs in Oxnard*. In particular, this means that spending by visitors who are staying in Ventura, Camarillo, or some other place nearby will not be included in these models.

To estimate spending in Oxnard, we make several assumptions. First, we assume that a visitor spends all of their money where they spend the night. For example, if a visitor spends the night in Oxnard, we assume the money they spent on food, gasoline, and entertainment was spent in Oxnard. As part of the survey, visitors reported the location of their hotel; of respondents who reported staying in a hotel, roughly 45% stayed in Oxnard. We multiply this percentage by the total spending for overnight visitors displayed in Table 4 to estimate total spending for each category.

Second, we assume in the first model that day visitors spend all of their money in Oxnard. This will certainly overestimate the amount spent by day visitors in the City of Oxnard as it is highly likely that day visitors spent a fraction of their expenditures in other nearby cities. The other extreme is to assume that day visitors do not spend any of their money in Oxnard. This is the assumption we make in the second Oxnard model. This will underestimate the amount spent by day visitors in Oxnard as day visitors likely spent some of their money there. *The true estimate will be somewhere in between these two estimates.* Table 8 shows the summary results for these two models.

Table 8.

City of Oxnard: Overnight visitors staying in Oxnard and day visitors

Type of Impact	Employment	Output
Direct Effect	19.2	\$ 1,387,575
Indirect Effect	2.1	\$ 313,763
Induced Effect	2.5	\$ 328,069
Total Effect	23.9	\$ 2,029,407

City of Oxnard: Overnight visitors staying in Oxnard

Type of Impact	Employment	Output
Direct Effect	8.8	\$ 690,441
Indirect Effect	1.1	\$ 160,004
Induced Effect	1.2	\$ 158,017
Total Effect	11.2	\$ 1,008,461

The total economic impact generated by overnight visitors staying in Oxnard is \$1.0 million. This number does not include day visitors. The total economic impact generated by overnight visitors and day visitors (assuming that day visitors spend all of their money in Oxnard) is \$2.0 million.

In terms of employment, the training camp supported a range of 11.2-23.9 total jobs. Of these, 5.0-12.0 jobs were in the “Food services and drinking places” sector. Other sectors impacted by the increased spending as a result of the training camp were “Hotels and motels” and “Retail Stores – Miscellaneous”. Table 9 provides more information.

**Table 9. Employment Impacts in the City of Oxnard
Overnight visitors staying in Oxnard and Day Visitors (Model 1)**

Sector	Employment
Food services and drinking places	12.0
Retail Stores – Miscellaneous	3.9
Hotels and motels, including casino hotels	2.3
Retail Stores - Clothing and clothing accessories	0.6
Real estate establishments	0.4
Retail Stores - Gasoline stations	0.3
Motion picture and video industries	0.3
Retail Stores - Furniture and home furnishings	0.3
Wholesale trade businesses	0.2
Services to buildings and dwellings	0.2

Overnight visitors staying in Oxnard (Model 2)

Sector	Employment
Food services and drinking places	5.0
Hotels and motels, including casino hotels	2.3
Retail Stores – Miscellaneous	1.3
Retail Stores - Clothing and clothing accessories	0.2
Real estate establishments	0.2
Services to buildings and dwellings	0.1
Wholesale trade businesses	0.1
Retail Stores - Gasoline stations	0.1
Employment services	0.1
Retail Stores - Furniture and home furnishings	0.1

6. Conclusions

The Dallas Cowboys' Training Camp brings a substantial number of visitors to the Oxnard area. With the increased visitors comes increased spending. Over 93% of people attending the training camp said they were in the Oxnard area because of the training camp. Moreover, on average, 88% of people who attended the training camp were visitors to the Oxnard area.

Visitors spent approximately \$3.2 million on hotels, food, gasoline, and entertainment while staying in Ventura County. When indirect and induced impacts were taken into account, the total economic impact of the Dallas Cowboys' Training Camp was \$3.6 million.

Estimates were more difficult to obtain for the City of Oxnard because we had to assume visitors were spending their money in Oxnard and not nearby places such as Ventura or Camarillo. The total economic impact of the Dallas Cowboys' Training Camp on the City of Oxnard ranges from \$1.0 million (assuming day visitors spent no money in Oxnard) to \$2.0 million (assuming day visitors spent all of their money in Oxnard). The true estimate lies somewhere between these two numbers.

In terms of employment, the training camp supported a total of 39.0 full-time and part-time jobs in Ventura County. In the Oxnard area, a range of 11.2 to 23.9 jobs were supported by the training camp.

7. Glossary

Direct impact (direct effect) – In input-output terminology, an initial expenditure (such as a payment to a local restaurant by a visitor) is referred to as a direct impact.

IMPLAN – Input-output model first developed by the U.S. Forest Service, the Bureau of Land Management and the Federal Emergency Management Agency for use in land planning and resource management. IMPLAN is based on matrix algebra and uses information about the types and amounts of production factors needed to produce any given output. IMPLAN uses dollar valuations of these inputs, and traces the currency flows from the original purchases of goods as they work their way through the economy of the study area.

Indirect impact (indirect effect) – Purchases made by entities directly impacted (see Direct impact above) attributable to the increase in business generated by the initial expenditure.

Induced impact (induced effect) – Local spending by employees of impacted firms (see Direct impact and Indirect impact) attributable to changes in income related to the impacts (direct and indirect) of the initial expenditure.

Input-output – Defined by the Economic Development Research Group (1997) as accounting tables tracing the linkages of inter-industry purchases and sales in a specific study area. Used to calculate the effects per dollar of spending on jobs, income, and output in that specific area.

8. References

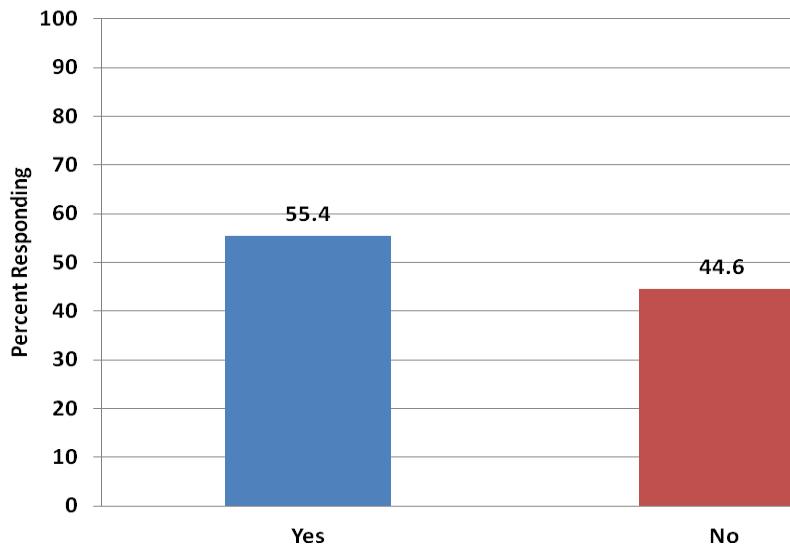
Bartlett, J. E. II, J. Kotrlik, and C. Higgins, “Organizational Research: Determining Appropriate Sample Size in Survey Research,” *Information Technology, Learning, and Performance Journal* 19:1 (Spring 2001), 43-50.

9. Appendix

Question 1. 1,381 respondents.

55 percent of respondents indicated that this year's training camp was the first they had ever attended.

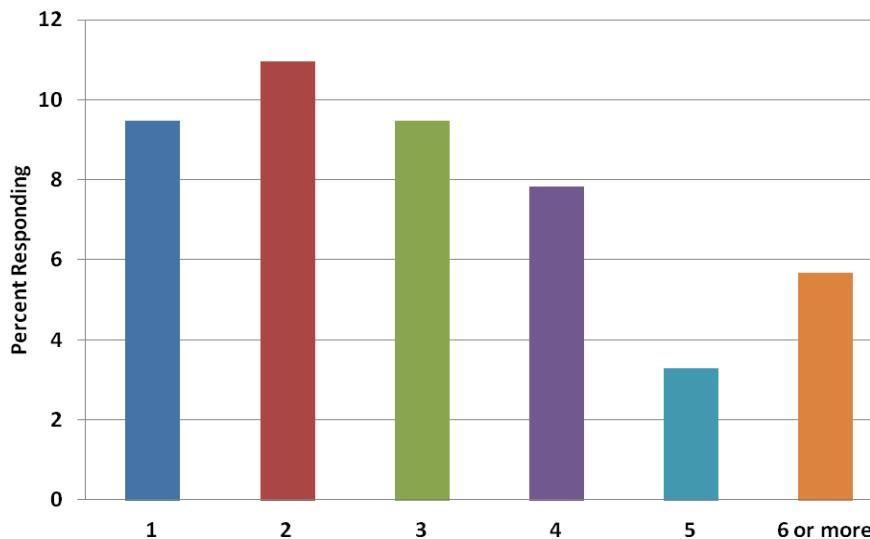
Is this your first time visiting the Dallas Cowboys' Training Camp?



Question 2. 1,340 respondents.

The 44.6 percent of people surveyed who said this was not their first time attending the training camp in Question 1 reported how many camps they had attended prior to this year's camp. 11 percent said they had attended 2 other camps and almost 6 percent said they had attended 6 or more camps.

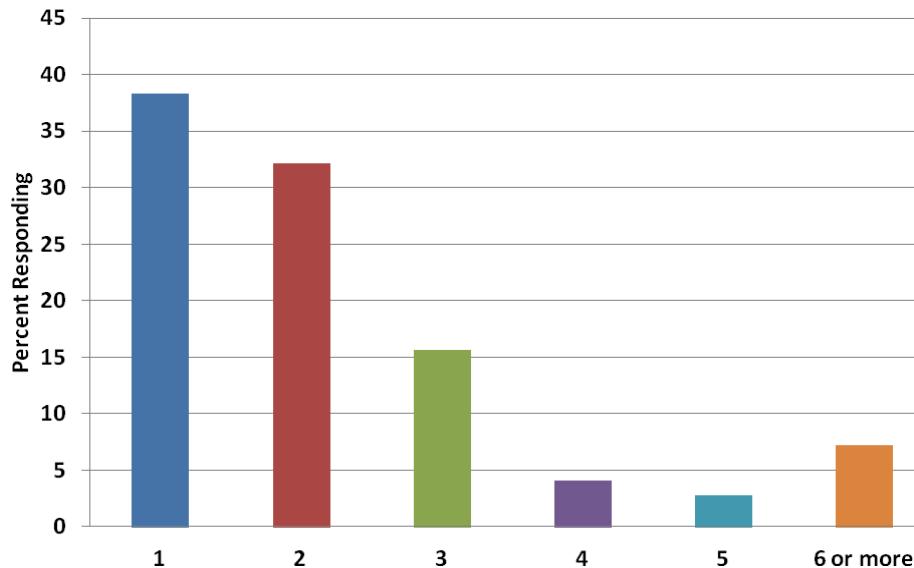
How many training camps have you been to before?



Question 3. 1,328 respondents.

38 % of respondents said they planned to attend 1 day of training camp. 32% of respondents said they would attend 2 days, while 7 % said they would attend 6 or more days of training camp.

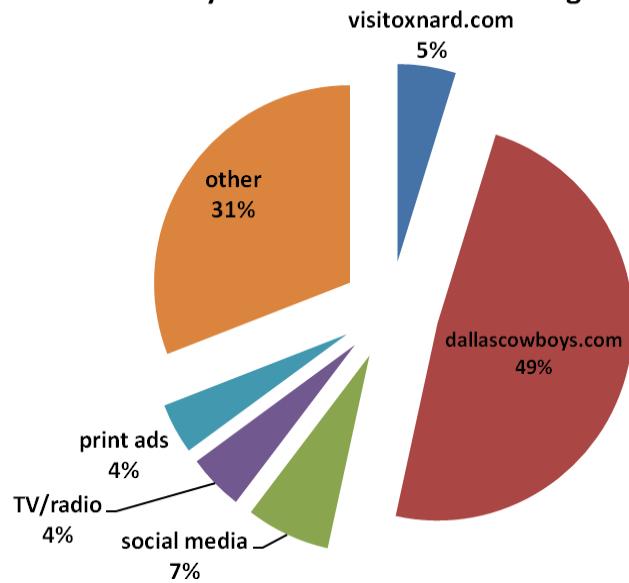
How many days do you plan to attend camp?



Question 4. 1,351 respondents.

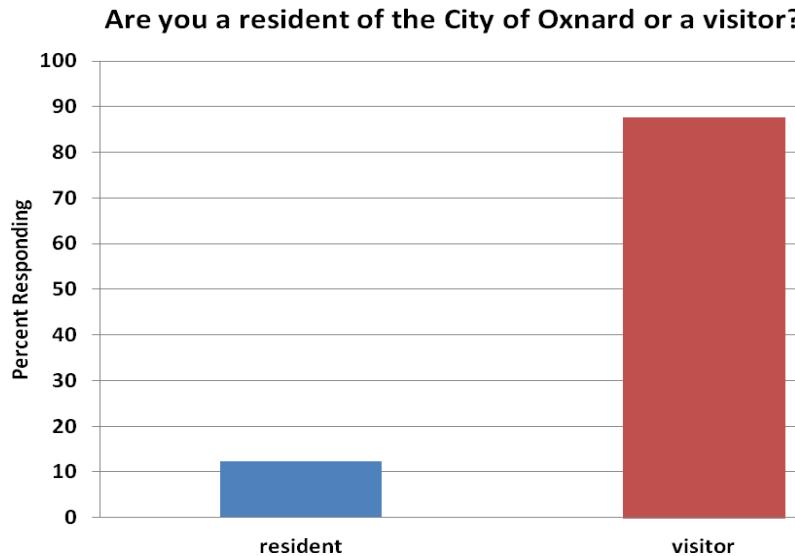
49% of respondents indicated that they heard about the training camp from the Dallas Cowboys' website. 31% of respondents said they heard about the training camp from other sources, including friends and family.

How did you hear about the training camp?



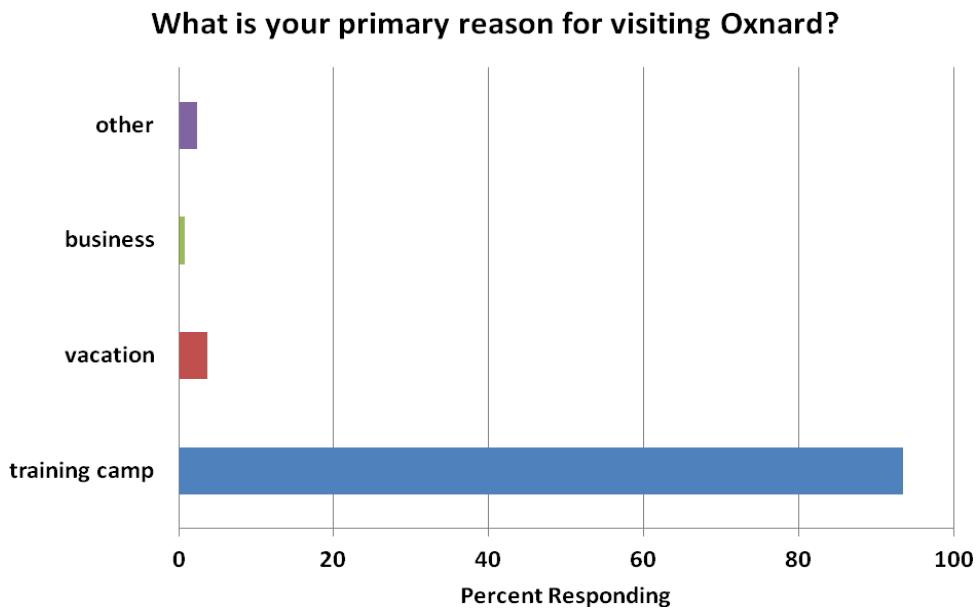
Question 5. 1,383 respondents.

88% of respondents indicated that they were not a resident of the City of Oxnard and were travelling to the Cowboys' Training Camp.



Question A. 1,185 respondents.

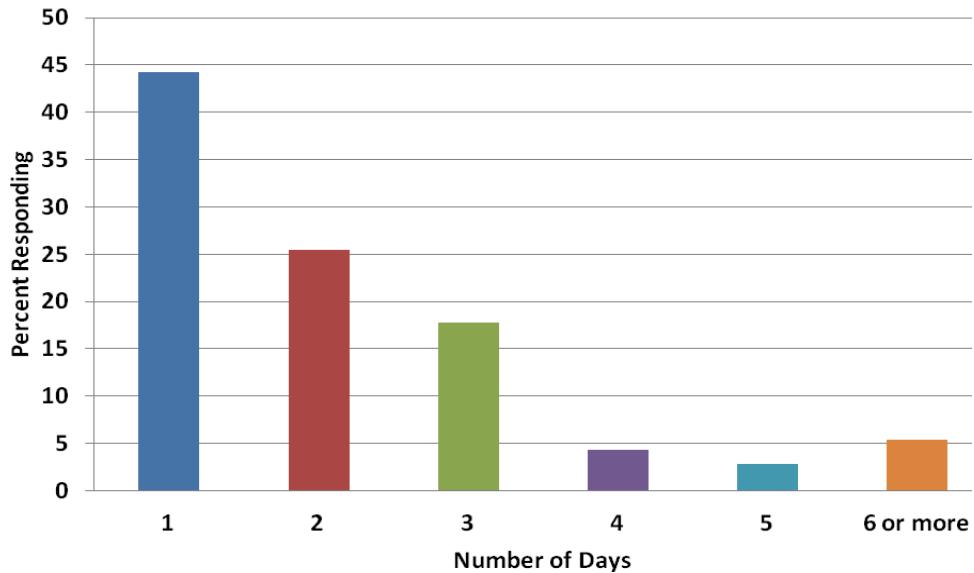
An overwhelming number of respondents (93%) said they were coming to Oxnard for the Cowboys' training camp. A small percentage (4%) came for vacation, while 2% came for other reasons.



Question B. 917 respondents.

44% of people said they were staying just one day in the Oxnard area. 25% planned to stay 2 days, while 18% planned to stay 3 days.

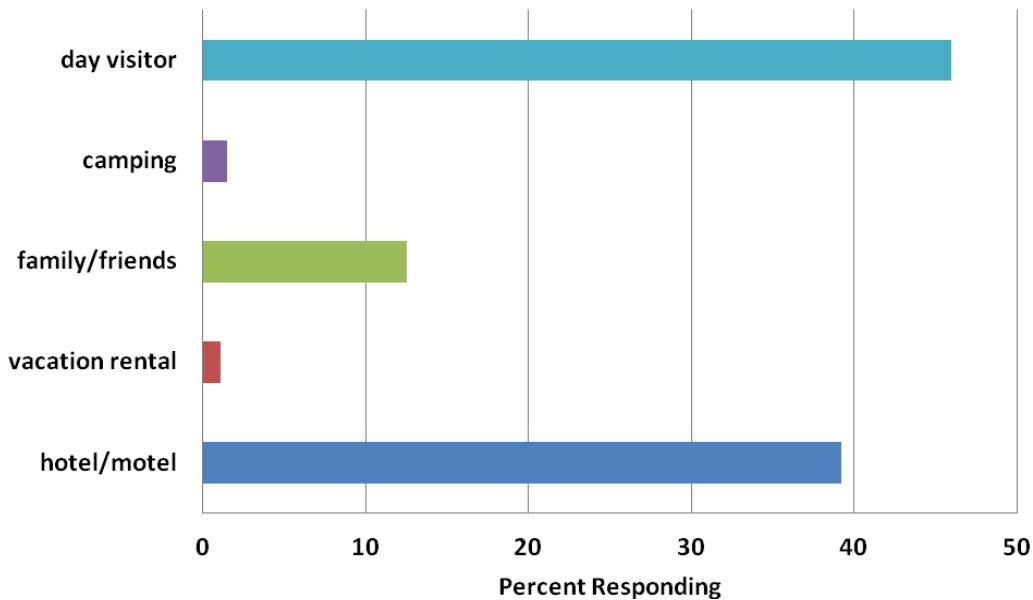
How long are you staying in the Oxnard area?



Question C. 1,042 respondents.

46% of people came only to Oxnard for the day, while 39% stayed in a hotel. 12% of people stayed with family and friends and the rest of the people either camped or stayed in a vacation rental.

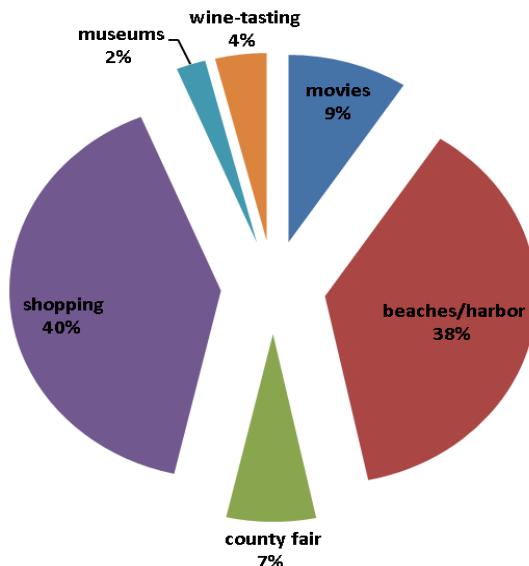
Where are you staying?



Question E. 726 respondents.

Shopping was the most popular activity that visitors planned to do in the area (40%). Beaches/Harbor was the next most popular activity (38%), while others planned to go to the movies or county fair. Many respondents planned to do more than one of the activities in the area.

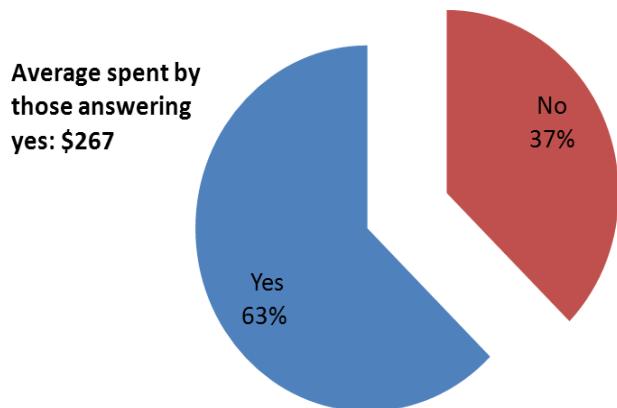
What activities do you plan to do in the area?



Question F. 1,143 respondents

63% of total respondents said they would spend money on entertainment while they were in the area. 55% of day visitors said they would spend money on entertainment; the average spent by day visitors was \$161.86. 74% of overnight visitors said they would spend money on entertainment; the average spent by overnight visitors was \$347.11.

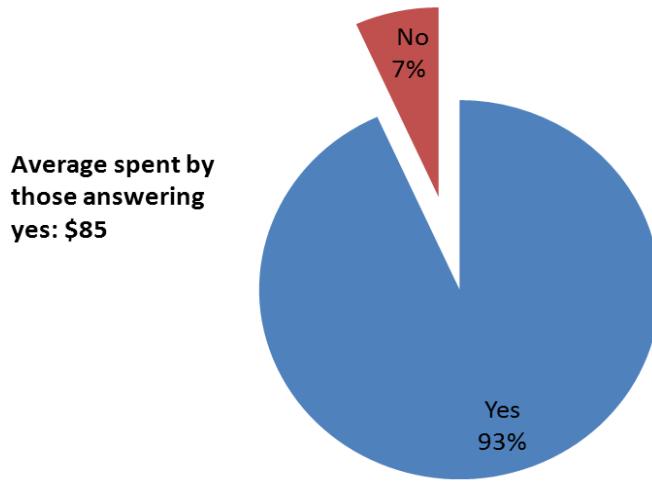
Will you spend money on entertainment in the area?



Question G. 1,172 respondents.

93% of total respondents said they planned to eat out while they were in the area. 90% of day visitors said they planned to eat out; the average spent by day visitors was \$69. 96% of overnight visitors said they planned to eat out; the average spent by overnight visitors was \$100.

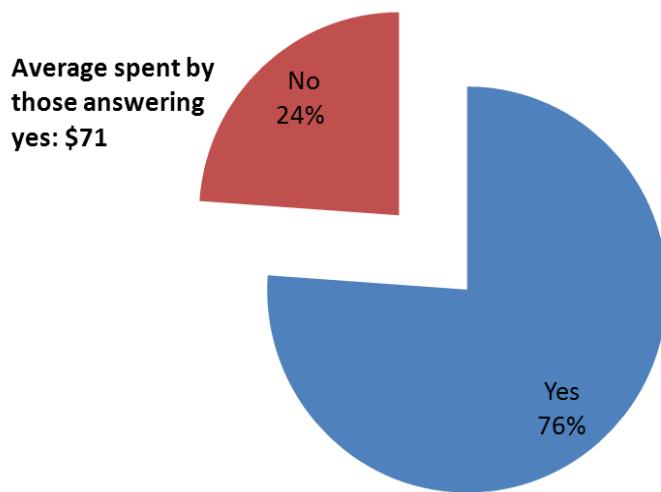
Do you plan on eating out during your stay?



Question I. 1,160 respondents.

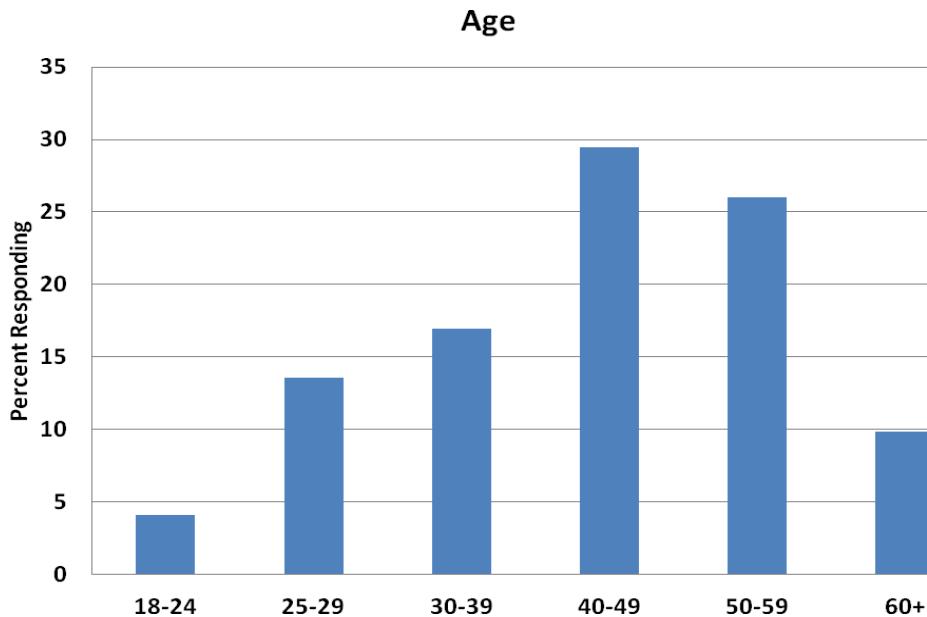
76% of total respondents said they planned to purchase gasoline in the area. 87% of overnight visitors planned to buy gasoline in the area; the average amount was \$80. 66% of day visitors planned to buy gasoline in the area; the average amount was \$62.

Do you plan to purchase gas in the area?



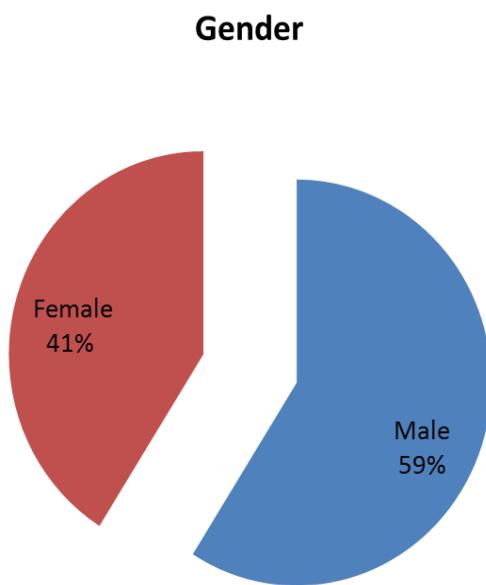
Question Age. 1,260 respondents.

29% of those surveyed were between the ages of 40-49, while 26% of respondents were between 50-59. Overall, 65% of respondents were aged 40 or older, while 35% of respondents were younger than 40.



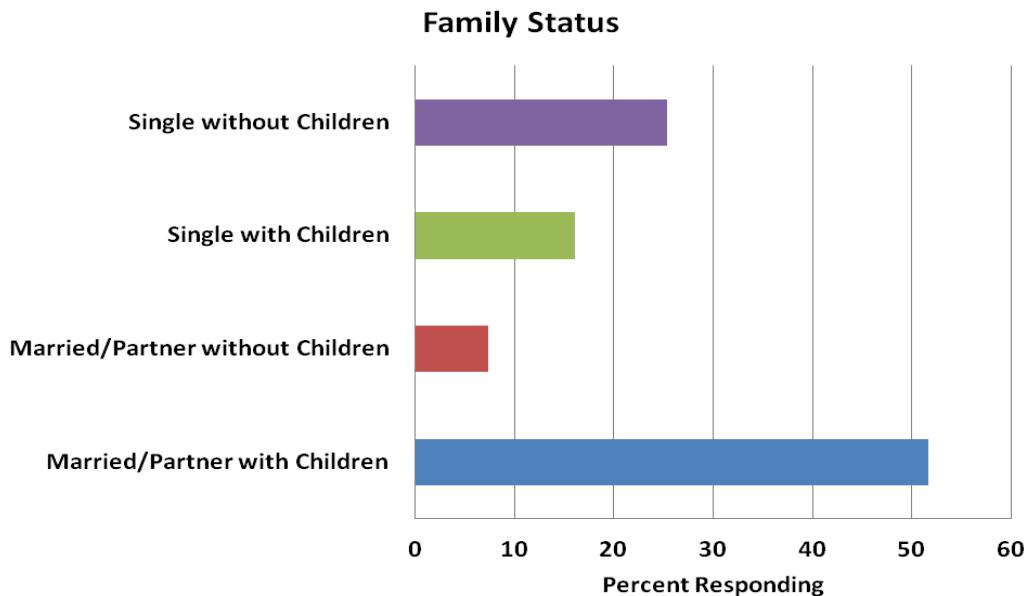
Question Gender. 1,309 respondents.

59% of respondents were male, while 41% of respondents were female.



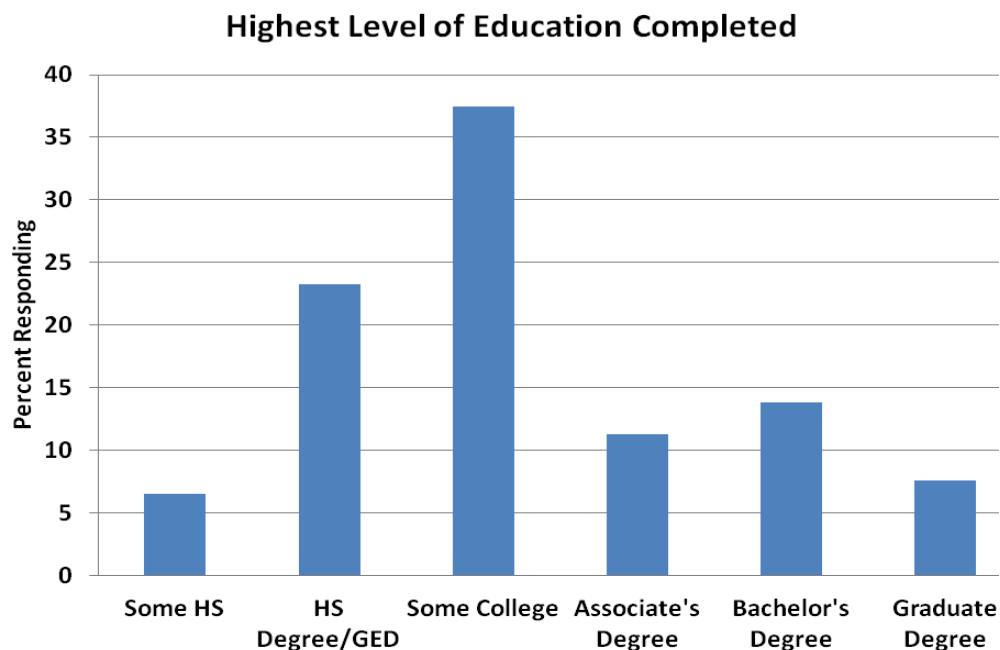
Question Family Status. 1,277 respondents.

52% of respondents reported that they were married or had a partner with children. 25% of respondents were single without children, while 16% were single with children. The remaining 7% were married or had a partner without children.



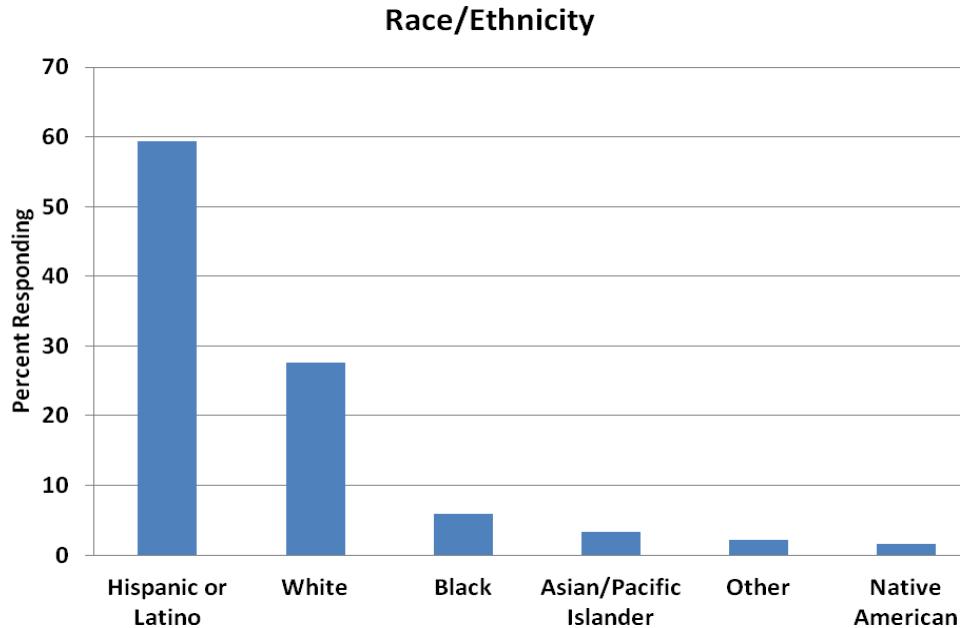
Question Education. 1,288 respondents.

30% of respondents completed a high school degree or less. 38% of respondents reported having attended college for some period of time, while 32% of respondents completed an Associate's, Bachelor's, or Graduate degree.



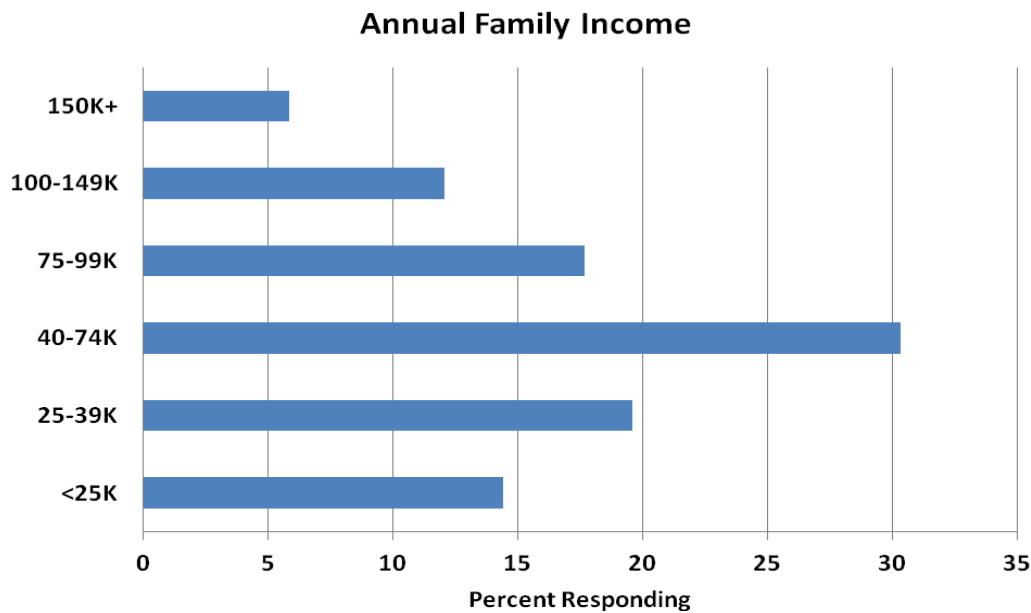
Question Race/Ethnicity. 1,298 respondents.

The majority of respondents (59%) reported that they were Hispanic or Latino. 28% of respondents said they were White, while 6% said they were Black. The remaining 7% responded that their race/ethnicity was Asian or Pacific Islander, Native American, or Other.



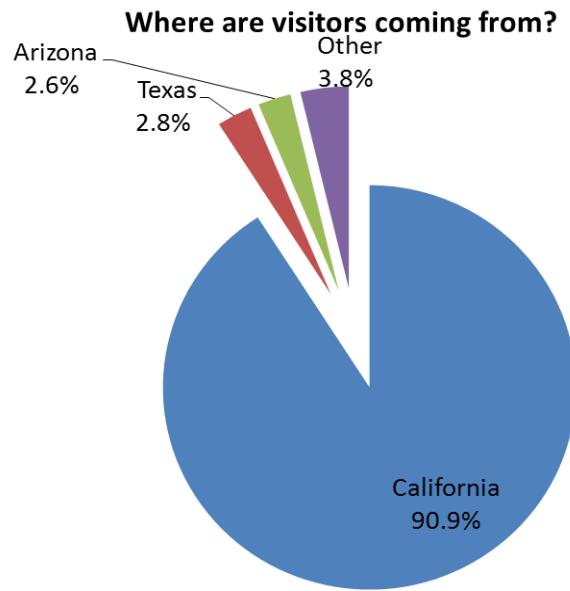
Question Annual Family Income. 1,226 respondents.

30% of respondents reported earning between \$40,000 and \$74,000 annually. Overall, 64% of respondents said they made an annual family income of \$74,000 or less. The remaining 36% earned \$75,000 or more.



Question Zip Code. 1087 respondents

The overwhelming majority of people visiting the Cowboys' training camp were from California. The main other states represented were Texas (home of the Dallas Cowboys) and Arizona.



Question Zip Code. 988 respondents.

More visitors came from Los Angeles County (25%) than any other county in California. Visitors from Ventura County also made up a significant portion of respondents (22%). Other counties include: Tulare, Stanislaus, Santa Clara, San Joaquin, Sacramento, Monterey, Merced, and others.

What counties are visitors coming from in California?

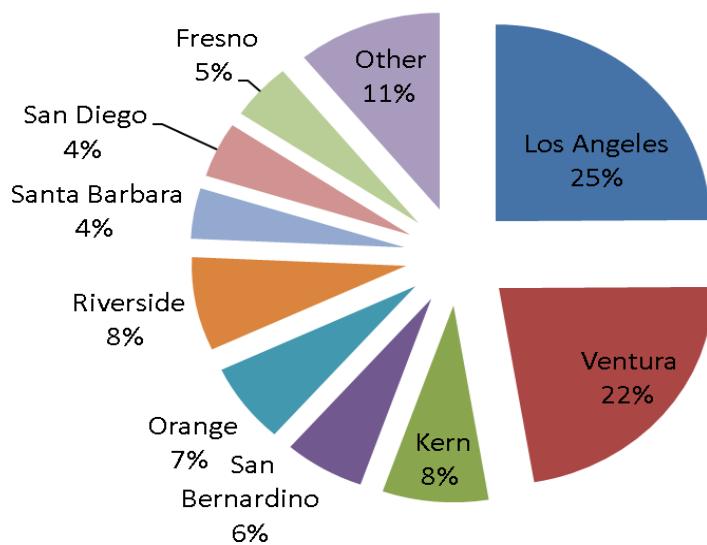


Figure 1. The Survey

 DALLAS COWBOYS' TRAINING CAMP VISITOR SURVEY		UCSB ECONOMIC FORECAST PROJECT 					
1. Is this your first time visiting the Dallas Cowboys' Training Camp <input type="checkbox"/> Yes <input type="checkbox"/> No							
2. How many training camps have you been to before?							
3. How many days do you plan to attend camp?							
4. How did you hear about the training camp?		Visitoxnard.com	DallasCowboys.com	Social Media	TV/Radio	Print Ads	Other
5. Are you a resident to the City of Oxnard, or a visitor?				Resident	Visitor		
<i>If answered VISITOR to question 5...</i>							
a. What is your primary reason for visiting the Oxnard area?		Training Camp	Vacation	Business	Other		
b. How long are you staying in the Oxnard area? (answer should be in # of days)							
c. Where are you staying?		Hotel/motel _____	Vacation rental	Family/friends	Camping	Day Visitor	
d. Approximately, how much will you spend each night on accommodations?							
e. What other activities do you plan to do in the area?		Movies	Beaches/Harbor	County Fair	Shopping	Museums	Wine-tasting
f. Approximately, how much will you spend on entertainment during your entire stay in the Oxnard area?							
g. Do you plan on eating out during your stay?				Yes	No		
h. Do you plan to purchase gas in the area during your stay?							
i. Approximately, how much will you spend on gasoline in the area?							
Name:		Email*:			Phone Number:		
Age:	<18	18 - 24	25 - 29	30 - 39	40 - 49	50 - 59	60+
Gender:	Male	Female		Zip code (Primary Residence):			
Family Status:	Married/Partner with Children		Married/Partner without Children		Single with Children		Single without Children
Education:	Some HS	HS Degree or GED		Some College	Associate's Degree	Bachelor's Degree	Graduate Degree
Race / Ethnicity:	Black	Asian / Pac. Isl.		White	Hispanic or Latino	Native American	Other
Annual Family Income:	<25K	25 - 39K		40 - 74K	75 - 99K	100 - 149K	150K+
<small>*Check if you would like to be included in future emails: <input type="checkbox"/> visitoxnard.com monthly email newsletter <input type="checkbox"/> Future Dallas Cowboys' Training Camp news</small>							